

cat tac ttt aag gtt gaa tat gtc aaa cat ctt ccc ttt gtt gct gga His Tyr Phe Lys Val Glu Tyr Val Lys His Leu Pro Phe Val Ala Gly 195 200 205	683
gcc atg att gat tct cat aca acg gct gag tat tgg aat agc agg act Ala Met Ile Asp Ser His Thr Thr Ala Glu Tyr Trp Asn Ser Arg Thr 210 215 220	731
agc gat cgc ctg aaa ata cag atg cca caa act tat gtt gtt cac ctg Ser Asp Arg Leu Lys Ile Gln Met Pro Gln Thr Tyr Val Val His Leu 225 230 235	779
ggg aat agt aaa gaa cta atg gaa gtt gct gaa gac aat gtc gca aga Gly Asn Ser Lys Glu Leu Met Glu Val Ala Glu Asp Asn Val Ala Arg 240 245 250 255	827
aga gtc cta cgg gaa cat att cgt gaa tcc ctt gga gta cgg agt gag Arg Val Leu Arg Glu His Ile Arg Glu Ser Leu Gly Val Arg Ser Glu 260 265 270	875
gat ctc ctg ttt gca ata ata aac agt gta tca cga gga aag gga caa Asp Leu Leu Phe Ala Ile Ile Asn Ser Val Ser Arg Gly Lys Gly Gln 275 280 285	923
gac tta ttt ctt caa gca ttt tat cag gct ttg cag ctc atc caa cac Asp Leu Phe Leu Gln Ala Phe Tyr Gln Ala Leu Gln Leu Ile Gln His 290 295 300	971
gag aaa ctt aaa gtg cct aga ata cat gct gta gtt gtg gga agt gat Glu Lys Leu Lys Val Pro Arg Ile His Ala Val Val Val Gly Ser Asp 305 310 315	1019
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aag aac acg att cat gac cgt gtc cat ttt gtg aac aag aca ttg gca Lys Asn Thr Ile His Asp Arg Val His Phe Val Asn Lys Thr Leu Ala 340 345 350	1115
gtg gcc cct tac ttg gca gca att gat gtg ctt gtt cag aat tct cag Val Ala Pro Tyr Leu Ala Ala Ile Asp Val Leu Val Gln Asn Ser Gln 355 360 365	1163
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Asn	Glu	Ile	Trp	His	Ser	Met	Val	Tyr	Asn	Gly	Phe	Phe	Glu	Ala	Phe				
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Arg	Ala	Gly	Ile	Gln	Phe	Phe	Leu	Ala	Phe	Leu	Ser	Ser	Gly	Arg	Ala				
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His	Asp	Ser	Glu	Phe	Lys	Gln	Glu	Ala	Leu	Leu	Ile	Val	His	Glu	Leu				
				165				170				175							
ctt	cag	gaa	cca	agc	tgt	cca	aaa	tct	agt	ctc	atg	gcc	tcc	att	ctt	576			
Leu	Gln	Glu	Pro	Ser	Cys	Pro	Lys	Ser	Ser	Leu	Met	Ala	Ser	Ile	Leu				
180								185				190							
tct	cct	tca	gtg	ttt	gga	gct	ttg	gac	agt	gga	gaa	acc	aag	tgc	ctg	624			
Ser	Pro	Ser	Val	Phe	Gly	Ala	Leu	Asp	Ser	Gly	Glu	Thr	Lys	Cys	Leu				
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Asp	Leu	Ala	Leu	Gln	Ile	Ile	Cys	Lys	Ile	Ser	Ser	Asp	Asn	Asp	Ile				
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Lys	Ser	Tyr	Leu	Leu	Ser	Ser	Gly	Ile	Val	Ser	Arg	Leu	Ser	Pro	Leu				
225				230				235				240							
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Leu	Gly	Glu	Gly	Lys	Met	Thr	Glu	Cys	Ser	Leu	Lys	Ile	Leu	Arg	Asn				
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ttg	agt	gac	gtg	aaa	gag	acc	gca	ggg	ttt	ata	atc	aga	aca	ggt	aat	816			
Leu	Ser	Asp	Val	Lys	Glu	Thr	Ala	Gly	Phe	Ile	Ile	Arg	Thr	Gly	Asn				
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tgc	gtc	agc	tcc	att	tca	gat	cat	ctg	gac	act	gga	agc	cac	agc	gaa	864			
Cys	Val	Ser	Ser	Ile	Ser	Asp	His	Leu	Asp	Thr	Gly	Ser	His	Ser	Glu				
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cgt	gaa	cat	gcg	gtg	gtc	atc	ctt	cta	ggg	gta	tgc	tcc	cac	agt	cct	912			
Arg	Glu	His	Ala	Val	Val	Ile	Leu	Leu	Gly	Val	Cys	Ser	His	Ser	Pro				
290				295				300											
gag	gtt	tgt	tca	ctt	tcc	atg	aag	gaa	ggc	gtc	atc	cca	gcc	ctt	gta	960			
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50						55					60						
ggg Gly	ggg Gly	tcc Ser	ctc Leu	ttg Leu	gat Asp	ggc Gly	cag Gln	atc Ile	tca Ser	gca Ala	gct Ala	gta Val	cca Pro	gtt Val	gtg Val	241	
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gac Asp	ttc Phe	tct Ser	gcc Ala	cga Arg	ctt Leu	caa Gln	ccc Pro	aac Asn	gag Glu	cac His	gca Ala	atg Met	gat Asp	cac His	cgg Arg	289	
85						90					95						
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100						105					110						
aag Lys	act Thr	gca Ala	atc Ile	tcc Ser	ggg Gly	gat Asp	tct Ser	ggc Gly	acg Thr	gca Ala	tca Ser	ttc Phe	cac His	ctt Leu	gca Ala	385	
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ccg Pro	acc Thr	ggc Gly	agc Ser	ggc Gly	gac Asp	cac His	cac His	aga Arg	gaa Glu	tcc Ser	aac Asn	gag Glu	gca Ala	agg Arg	gca Ala	433	
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180						185					190						
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cac His	ccg Pro	gtg Val	gtg Val	cag Gln	cct Pro	ggg Gly	gtc Val	agc Ser	taa	cctttgcact	gaccataatg					675	
210						215											
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ctgttcgtct gttttatcct gataccggtg ctgtgttggt tatgtacata atgaagtagt																	975
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ctacc

1040

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tctttttctc cgcccaca atg ggt aaa gct aaa aag gga cca aag ttt gct	171
Met Gly Lys Ala Lys Lys Gly Pro Lys Phe Ala	
1 5 10	
ggt atg aag aag att gtc act tcc aaa gca atc aaa agc tac aaa gaa	219
Val Met Lys Lys Ile Val Thr Ser Lys Ala Ile Lys Ser Tyr Lys Glu	
15 20 25	
gag gtt ttg aac cca gaa aag aag aat ctt atg aag gaa aag tta ccc	267
Glu Val Leu Asn Pro Glu Lys Lys Asn Leu Met Lys Glu Lys Leu Pro	
30 35 40	
aga aat gtt cca act cat tct tca gcg ctt ttc ttt caa tac aac act	315
Arg Asn Val Pro Thr His Ser Ser Ala Leu Phe Phe Gln Tyr Asn Thr	
45 50 55	
gca ctg gga ccc cct tat cgt gtt ttg gtg gac acc aac ttc atc aat	363
Ala Leu Gly Pro Pro Tyr Arg Val Leu Val Asp Thr Asn Phe Ile Asn	
60 65 70 75	
ttc tcg atc caa aat aaa ttg gat ctg gag aaa ggg atg atg gac tgc	411
Phe Ser Ile Gln Asn Lys Leu Asp Leu Glu Lys Gly Met Met Asp Cys	
80 85 90	
tta tat gca aaa tgc acc cct tgt att acg gac tgt gtg atg gca gaa	459
Leu Tyr Ala Lys Cys Thr Pro Cys Ile Thr Asp Cys Val Met Ala Glu	
95 100 105	
ctc gag aag tta ggc caa aaa tat cgt gta gct cta agg att gcc aag	507
Leu Glu Lys Leu Gly Gln Lys Tyr Arg Val Ala Leu Arg Ile Ala Lys	
110 115 120	
gat cct cga ttt gag aga ata cta tgt act cat aaa ggg acc tat gct	555
Asp Pro Arg Phe Glu Arg Ile Leu Cys Thr His Lys Gly Thr Tyr Ala	
125 130 135	
gat gac tgc ctt gtt gag aga gtt act cag cac aag tgc tac att gtt	603
Asp Asp Cys Leu Val Glu Arg Val Thr Gln His Lys Cys Tyr Ile Val	

tggtaatatc gtggtgtgac tcgtgtctgc ttcttttttaa aacaatattt ttggacttgt 1057
 tcctgcaact tgagagatgc acttgtcctt tatcaacaga tctatatgtc gccgtattat 1117
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 aggat 1182

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 <212> DNA
 <213> Zea mays

<220>
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 tat ggt gtg ttg ctg cag tta cca gct cct cag ctt gag aat gcc ttg 97
 Tyr Gly Val Leu Leu Gln Leu Pro Ala Pro Gln Leu Glu Asn Ala Leu
 20 25 30
 agt aag aac ccg aca ctg aag acg ccc ttg gct gag cat gcc gag cag 145
 Ser Lys Asn Pro Thr Leu Lys Thr Pro Leu Ala Glu His Ala Glu Gln
 35 40 45
 cca aat att cgg tcg aca ctt cca agg tct acc ttg gtg gtt ctg ggt 193
 Pro Asn Ile Arg Ser Thr Leu Pro Arg Ser Thr Leu Val Val Leu Gly
 50 55 60
 ctt gct gaa gat caa cca cag caa cca gca gta aca cag gtg cag agc 241
 Leu Ala Glu Asp Gln Pro Gln Gln Pro Ala Val Thr Gln Val Gln Ser
 65 70 75 80
 agc caa aac cag gct gcg gaa acc agt agc tct gct gct gat acg gct 289
 Ser Gln Asn Gln Ala Ala Glu Thr Ser Ser Ser Ala Ala Asp Thr Ala
 85 90 95
 aca gaa gta act cag gaa tct tct ggt gct agc taa catcttttat 335
 Thr Glu Val Thr Gln Glu Ser Ser Gly Ala Ser
 100 105
 gccgaaatgg gctaattgctt gcaggttgta tgccatctat cattttcatc tctggagtga 395
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 tctaagatgt gtttttctgt gtgatgcgtc tcattggacg ggtgttagct gctgcatctg 515
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654

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<213> Glycine max

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gaa ccc gcg aag ctg ctg ttg cca tac ctt caa cgc gcc gat gaa ttg	96
Glu Pro Ala Lys Leu Leu Leu Pro Tyr Leu Gln Arg Ala Asp Glu Leu	
20 25 30	
caa aag cat gaa cca ctc gtc gct tat tac tgt cga tta tat gca atg	144
Gln Lys His Glu Pro Leu Val Ala Tyr Tyr Cys Arg Leu Tyr Ala Met	
35 40 45	
gaa cgg ggg ttg aag att ccg caa agt gag cgc acg aag acc act aat	192
Glu Arg Gly Leu Lys Ile Pro Gln Ser Glu Arg Thr Lys Thr Thr Asn	
50 55 60	
gct ctt ctg gtt tcg ctc atg aag cag ctt gaa aag gat aaa aag tca	240
Ala Leu Leu Val Ser Leu Met Lys Gln Leu Glu Lys Asp Lys Lys Ser	
65 70 75 80	
atc cag ttg ggg cct gaa gac aat tta tat ctc gag gga ttt gct ttg	288
Ile Gln Leu Gly Pro Glu Asp Asn Leu Tyr Leu Glu Gly Phe Ala Leu	
85 90 95	
aat gtg ttt gga aaa gca gac aag caa gat cgt gct gga aga gca gat	336
Asn Val Phe Gly Lys Ala Asp Lys Gln Asp Arg Ala Gly Arg Ala Asp	
100 105 110	
ttg act aca gca aaa aca ttt tat gct gcc agt atc ttt ttt gag att	384
Leu Thr Thr Ala Lys Thr Phe Tyr Ala Ala Ser Ile Phe Phe Glu Ile	
115 120 125	
ctt aat caa ttt gga gca gtt cag cct gat ctg gag cag aaa caa aaa	432
Leu Asn Gln Phe Gly Ala Val Gln Pro Asp Leu Glu Gln Lys Gln Lys	
130 135 140	
tat gct gtg tgg aaa gca gct gaa ata aga aaa gct ttg aaa gaa gga	480
Tyr Ala Val Trp Lys Ala Ala Glu Ile Arg Lys Ala Leu Lys Glu Gly	
145 150 155 160	
agg aag ccc aca gct ggc ccc cct gat ggt gat gag gat ctg tca gtt	528
Arg Lys Pro Thr Ala Gly Pro Pro Asp Gly Asp Glu Asp Leu Ser Val	


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aac cat tca tca agt gct caa cac agt agc aga aat gaa act gtg gaa      1248
Asn His Ser Ser Ser Ala Gln His Ser Ser Arg Asn Glu Thr Val Glu
                405                      410                      415

cct aag cca aca act act cag gca tac cag tac gac agt aac tac cag      1296
Pro Lys Pro Thr Thr Thr Gln Ala Tyr Gln Tyr Asp Ser Asn Tyr Gln
                420                      425                      430

cca gca cct gaa aaa ata gca gag gca cac aag gct gca aga ttt gcc      1344
Pro Ala Pro Glu Lys Ile Ala Glu Ala His Lys Ala Ala Arg Phe Ala
                435                      440                      445

gtt ggg gca ctg gca ttt gat gat gtc tca gtt gca gta gac ttc ttg      1392
Val Gly Ala Leu Ala Phe Asp Asp Val Ser Val Ala Val Asp Phe Leu
                450                      455                      460

aag aaa tca ctt gag ttg ctg aca aat cca tca gct ggc cag taa      1437
Lys Lys Ser Leu Glu Leu Leu Thr Asn Pro Ser Ala Gly Gln
465                470                      475

aattttttgt aaatcgaaat gtggatttcg gtggtgtttt ctacctttta tttgcatgtc 1497

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ccgtacgcgt cgtctcctgc tgtttctccc catccctttc ctgcctcggc ttgcaccttc      180

aaccttactt aaagctctga cctcaaactg aaaggacct gcgaagagtt ttttttgcgg      240

cagtaca atg gag gta ttt ggc aaa tct gtg att gct gag ccc agc aat      289
Met Glu Val Phe Gly Lys Ser Val Ile Ala Glu Pro Ser Asn
1                5                10

gtg att ttc ttg tcc gcg atc ctt aac aca gaa ggg tca aac cct agt      337
Val Ile Phe Leu Ser Ala Ile Leu Asn Thr Glu Gly Ser Asn Pro Ser
15                20                25                30

cac aag tgt gac aag agg tgc cag agc gag cgc att ttg ggg aac atg      385
His Lys Cys Asp Lys Arg Cys Gln Ser Glu Arg Ile Leu Gly Asn Met

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Asn Gln Arg Ile Leu Tyr Asp Asn His Asn Ser Leu Cys Arg Val Ser				
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Gly Gln Leu Phe Pro Leu Ser Pro Leu Glu Gln Gln Ala Val Arg Gly				
	80	85	90	
atc cgc agg aag cat gaa gtg gac agc agt gaa ggt tgc tgc ttt aag				577
Ile Arg Arg Lys His Glu Val Asp Ser Ser Glu Gly Cys Cys Phe Lys				
	95	100	105	110
cgc agg cgc ggc gca cag ctg cat cct tcc ccc ttc gag agg tcc tac				625
Arg Arg Arg Gly Ala Gln Leu His Pro Ser Pro Phe Glu Arg Ser Tyr				
	115	120	125	
tct gct gtg tat cca atc ccg agc cag gtt gga gat ggc atg gac atg				673
Ser Ala Val Tyr Pro Ile Pro Ser Gln Val Gly Asp Gly Met Asp Met				
	130	135	140	
agc tag agctaagag acttcctttt cttcggccag ccacctaatt tcgttctgtc				729
Ser				
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ttc gag acg gtg gac tcg ctg agc gtc ttc cgg gcg aag aac tac gac Phe Glu Thr Val Asp Ser Leu Ser Val Phe Arg Ala Lys Asn Tyr Asp 140 145 150 155	662
gcc acc atc gag ttc tac tgg gcg ccg atg ctg gcc gag tcc aac tcc Ala Thr Ile Glu Phe Tyr Trp Ala Pro Met Leu Ala Glu Ser Asn Ser 160 165 170	710
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ccc atg gac agg cac tac agc ttc tgg aag ggc gcc gac gtc ctc gtc Pro Met Asp Arg His Tyr Ser Phe Trp Lys Gly Ala Asp Val Leu Val 190 195 200	806
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agc agc aac tgc tac aac cag acg tcg ccg atc agc gcc gcc tcg tcc Ser Ser Asn Cys Tyr Asn Gln Thr Ser Pro Ile Ser Ala Ala Ser Ser 285 290 295	1094
tac cgt ggc ggc acg agc cgg gag atg ctg cgc gca acg gag gag gtg Tyr Arg Gly Gly Thr Ser Arg Glu Met Leu Arg Ala Thr Glu Glu Val 300 305 310 315	1142
ctg gcc acg tcg cgg gtg ccc gtc ggg ctg gtc aac atc acg cgg ctg Leu Ala Thr Ser Arg Val Pro Val Gly Leu Val Asn Ile Thr Arg Leu 320 325 330	1190
tcc gag tac cgc cgg gac gcg cac acg cag acc tac aag aag cag tgg Ser Glu Tyr Arg Arg Asp Ala His Thr Gln Thr Tyr Lys Lys Gln Trp 335 340 345	1238


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atagcacaat cccgagattt gcagaagcag ctaccttttt agctaaacgc aaatgcaaca 392
tctggttcga agctaggggtt ttaaccacct tgatcctgca aacgagaaga agaaaatgggt 452
gacaacacga tgaaaaattg acgtccaaac atattaactt ctgcttgaaa agagggttgcc 512
gtccttacag gactctgcta gctacacatc aacacatcat tggtaatcct tctgcataca 572
tgtaataata taatataact agattatctg atgtccaacg tgtattgact ctacttaggg 632
ctgaacataa tacttatggc tcgttaggtc gcttggctcg acttagttta tttcaatttt 692
gttacgagct aagttagtagt tttagctcgg tttgttaacg agccatctcg ttagctcaaa 752
cgagctatca tttatcaaca aaataaagtc ttcacttatg ttggatgaac taataagtga 812
ttagttatat taatttggtg ttgaatttat gtggt 847

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  Phe Gly Ser Ser Met Ala Ser Ala Thr Arg Leu Val His Cys Glu Leu
  1             5             10            15

cgg tcg gcg agg ccc gcg gtt cgg gcg agg gaa ccg gcc ggt ccg gtt 97
  Arg Ser Ala Arg Pro Ala Val Arg Ala Arg Glu Pro Ala Gly Pro Val
             20            25            30

cag gtt acg atc ccg aaa ccc aaa gcg gcg gag gcg gaa ggc gcg aac 145
  Gln Val Thr Ile Pro Lys Pro Lys Ala Ala Glu Ala Glu Gly Ala Asn
             35            40            45

atc gtt ttg cag ccg cgg ttg tgc act ctg aga tcc tac ggt tcg gat 193
  Ile Val Leu Gln Pro Arg Leu Cys Thr Leu Arg Ser Tyr Gly Ser Asp
             50            55            60

cga gcg ggg gtt ctg atc aag gcc cgc aag gag ggt gac gat gat gac 241
  Arg Ala Gly Val Leu Ile Lys Ala Arg Lys Glu Gly Asp Asp Asp Asp
             65            70            75            80

gtg tcc ccc ttc ttc gcc gct ctt tcc gac tat att gag agc tct aag 289
  Val Ser Pro Phe Phe Ala Ala Leu Ser Asp Tyr Ile Glu Ser Ser Lys
             85            90            95

aaa agt cat gat ttt gag atc atc tct ggt cgt cta gct atg atg gtg 337
  Lys Ser His Asp Phe Glu Ile Ile Ser Gly Arg Leu Ala Met Met Val

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gcagccccctt acatactctc tgcggactgc ggtccgcacc gcacgccatc tcagcaagac    180
gagagctcca ccgcgctggt cacttcttct gacgaagg atg gcg gga aaa gag gat    236
                               Met Ala Gly Lys Glu Asp
                               1                               5

gag aat gag aag cca tcg ttg gtg gca gcc ggc ggc aag caa gat cgg    284
Glu Asn Glu Lys Pro Ser Leu Val Ala Ala Gly Gly Lys Gln Asp Arg
                               10                               15                               20

aca gcg gcg acc acg gaa tcc ctt ccg caa agg acg aat ctt gag tgg    332
Thr Ala Ala Thr Thr Glu Ser Leu Pro Gln Arg Thr Asn Leu Glu Trp
                               25                               30                               35

gga aag gca gcg tgt agc gag gat gac atc cag aag tgt gta gct gcc    380
Gly Lys Ala Ala Cys Ser Glu Asp Asp Ile Gln Lys Cys Val Ala Ala
                               40                               45                               50

ggg gcc ttc cat ccc ggt gag ctg gtc gaa tgg cga gct ccc gtc aag    428
Gly Ala Phe His Pro Gly Glu Leu Val Glu Trp Arg Ala Pro Val Lys
55                               60                               65                               70

gat gag act ccg acg cta tcc acc atg gag gat cag ttt gtt atc ctg    476
Asp Glu Thr Pro Thr Leu Ser Thr Met Glu Asp Gln Phe Val Ile Leu
                               75                               80                               85

tct ctg acg cac ata att tgc ggt ctg agg gtc gat gcg agc gat ttc    524
Ser Leu Thr His Ile Ile Cys Gly Leu Arg Val Asp Ala Ser Asp Phe
                               90                               95                               100

ctg gtc agt gtg ctc gag tac tac aga ctt gag tgg tct cac ctg acg    572
Leu Val Ser Val Leu Glu Tyr Tyr Arg Leu Glu Trp Ser His Leu Thr
                               105                               110                               115

ccc aac tct att acg gcg ctg agc atc ttc gcc cac ctt tgt gag gcc    620
Pro Asn Ser Ile Thr Ala Leu Ser Ile Phe Ala His Leu Cys Glu Ala
                               120                               125                               130

tac gtg gag gcg cct cca act gtg gag gtc ttc acg cac ttc tac agc    668
Tyr Val Glu Ala Pro Pro Thr Val Glu Val Phe Thr His Phe Tyr Ser
135                               140                               145                               150

ctc tat cac aat agg aaa ggc gaa acg aca aca ctg ggc gcc gtc tac    716
Leu Tyr His Asn Arg Lys Gly Glu Thr Thr Thr Leu Gly Ala Val Tyr
                               155                               160                               165

ttc cgg ctc agg gac agg atg aag aag aat tat cca ttg tac tac ttg    764
Phe Arg Leu Arg Asp Arg Met Lys Lys Asn Tyr Pro Leu Tyr Tyr Leu

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cct act gtg gct gaa gag cgg aaa ata gca gag tta gtg aaa cct acg	1484
Pro Thr Val Ala Glu Glu Arg Lys Ile Ala Glu Leu Val Lys Pro Thr	
410 415 420	
ttt tca gtc att ggt gcc aaa agg aag gca tct gcc ccc cgg tct cgt	1532
Phe Ser Val Ile Gly Ala Lys Arg Lys Ala Ser Ala Pro Arg Ser Arg	
425 430 435	
tca aag aga aga gca aag tat tca tta ctt tcc gtt gtt aca aag acc	1580
Ser Lys Arg Arg Ala Lys Tyr Ser Leu Leu Ser Val Val Thr Lys Thr	
440 445 450	
agg atg tca tct ttg gac act ggt tct ata aaa ggg act tct aga aca	1628
Arg Met Ser Ser Leu Asp Thr Gly Ser Ile Lys Gly Thr Ser Arg Thr	
455 460 465 470	
aaa gag gca gtg tta gcg ctg aat tca cgg tca ata gga ttg gct cga	1676
Lys Glu Ala Val Leu Ala Leu Asn Ser Arg Ser Ile Gly Leu Ala Arg	
475 480 485	
tgc cct cct gcc tct tta gca gaa ggg aca ggg aac ggt gga ctg ttc	1724
Cys Pro Pro Ala Ser Leu Ala Glu Gly Thr Gly Asn Gly Gly Leu Phe	
490 495 500	
atg ctt gcc aaa gtt gtt gac cat act aag gtt gtt gag gat tcc atg	1772
Met Leu Ala Lys Val Val Asp His Thr Lys Val Val Glu Asp Ser Met	
505 510 515	
tcg aat ata ctc ctt aat caa caa gtt gga gat tct tct cgc aag gag	1820
Ser Asn Ile Leu Leu Asn Gln Gln Val Gly Asp Ser Ser Arg Lys Glu	
520 525 530	
gtt gat cct gca caa tct atc act gag att gtc caa gac cag gag gcc	1868
Val Asp Pro Ala Gln Ser Ile Thr Glu Ile Val Gln Asp Gln Glu Ala	
535 540 545 550	
att gag gtt tca gct gcc att ccg gtg cct aat aag gag gaa ata aac	1916
Ile Glu Val Ser Ala Ala Ile Pro Val Pro Asn Lys Glu Glu Ile Asn	
555 560 565	
agt ggg gtg ata tgg gag cgg atg cag aaa gtt cag agt gaa tac gtg	1964
Ser Gly Val Ile Trp Glu Arg Met Gln Lys Val Gln Ser Glu Tyr Val	
570 575 580	
tca ctc agt atg aca gcc tcc tct gag ctt tta gaa caa gca aag aag	2012
Ser Leu Ser Met Thr Ala Ser Ser Glu Leu Leu Glu Gln Ala Lys Lys	
585 590 595	
ctg gtc atg gag aat aaa cgc ctg aag gac gtg cag ata atg ctg tcg	2060
Leu Val Met Glu Asn Lys Arg Leu Lys Asp Val Gln Ile Met Leu Ser	
600 605 610	
caa caa gtg aaa gac ctc gaa gac ggc aga agg ctc tta aca gaa agg	2108
Gln Gln Val Lys Asp Leu Glu Asp Gly Arg Arg Leu Leu Thr Glu Arg	
615 620 625 630	

245	250	255	260	
agt gac cag ctc cca gag tcc agg gaa gcg gcc cga act cta ctt ctc				1050
Ser Asp Gln Leu Pro Glu Ser Arg Glu Ala Ala Arg Thr Leu Leu Leu	265	270	275	
gag ctt caa aat gtg tat gag aaa tct cat gat ctc atc aag cca gct				1098
Glu Leu Gln Asn Val Tyr Glu Lys Ser His Asp Leu Ile Lys Pro Ala	280	285	290	
act cct act gtc aat aat gag cat act gtg aat gag gag aat cca gag				1146
Thr Pro Thr Val Asn Asn Glu His Thr Val Asn Glu Glu Asn Pro Glu	295	300	305	
gtg agt tct tgg gaa agc ttc tgt cag tca aaa ctt tct cct ctt agt				1194
Val Ser Ser Trp Glu Ser Phe Cys Gln Ser Lys Leu Ser Pro Leu Ser	310	315	320	
gct caa gct gta ctt cgt gta acc acc agt atc gct cgg gag ggt ctt				1242
Ala Gln Ala Val Leu Arg Val Thr Thr Ser Ile Ala Arg Glu Gly Leu	325	330	335	340
gtt tca tga cacgcacatt aaacctcact ttgcggcttt catcatttcc				1291
Val Ser				
ttgtttgctt atcattttct tctgtaaata cagtgcgaca attgagatga ttgagttgag				1351
ttgtcgtcga agcacgtatt gagcccaaga tttataatgt gtattctatt attttcccc				1411
tagctgttgt tacctatatt acttttgatt aatactacta ctactactag ataatggacc				1471
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caa gga aat atg cat gaa cct gct atc gac atg cct ttt gga agt gta				96
Gln Gly Asn Met His Glu Pro Ala Ile Asp Met Pro Phe Gly Ser Val	20	25	30	
ctt ctg caa gca ctg gtt tca agt gat gtc aat gga gat atg gag gca				144
Leu Leu Gln Ala Leu Val Ser Ser Asp Val Asn Gly Asp Met Glu Ala	35	40	45	

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 aaagggcaga gtaataaggt ctcggtggcc taaatcagtt cttagtttct taccacaac 884
 ctgtaactaa ctttggtgtc tcttttcacg tagacataaa tgtcatgcaa cgcaactgcg 944
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 <213> Zea mays

<220>
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 1 5 10 15

aca gaa gca gct cct tgg agg cag cag gaa aga agt gcc acc aat atc 96
 Thr Glu Ala Ala Pro Trp Arg Gln Gln Glu Arg Ser Ala Thr Asn Ile
 20 25 30

tgt cga gaa gct gaa ggg agg cca aga att gca tct gtc tat gct gat 144
 Cys Arg Glu Ala Glu Gly Arg Pro Arg Ile Ala Ser Val Tyr Ala Asp
 35 40 45

ata gag aga agg gtt ggg ggc ttc gac ttt tta gag tgt aat aac aag 192
 Ile Glu Arg Arg Val Gly Gly Phe Asp Phe Leu Glu Cys Asn Asn Lys
 50 55 60

gac ttc agg gct ctc aga ata ttg ggt gca ttg aac gcg aga gat gct 240
 Asp Phe Arg Ala Leu Arg Ile Leu Gly Ala Leu Asn Ala Arg Asp Ala
 65 70 75 80

aag aac aag aat gac agc agt ggc aga cca atg gct act cac aga aca 288
 Lys Asn Lys Asn Asp Ser Ser Gly Arg Pro Met Ala Thr His Arg Thr
 85 90 95

gga tat gac cta acc acc tct gga agc ttc cag gct cct att gtg gtc 336
 Gly Tyr Asp Leu Thr Thr Ser Gly Ser Phe Gln Ala Pro Ile Val Val
 100 105 110

atg aag cct gca gga acc act gaa aag cat ggg gtt tca ctt gct tct 384
 Met Lys Pro Ala Gly Thr Thr Glu Lys His Gly Val Ser Leu Ala Ser
 115 120 125

gtt gcc ccc ata gca ggc cta aga agc ctt aga aag ttg cca gct aga 432
 Val Ala Pro Ile Ala Gly Leu Arg Ser Leu Arg Lys Leu Pro Ala Arg

tca atg aac gaa gaa gac gca agt atc aaa gaa gtc atg gca tca gtc	1152
Ser Met Asn Glu Glu Asp Ala Ser Ile Lys Glu Val Met Ala Ser Val	
370 375 380	
act gca aat aaa gat cac cag tat atc tat gag ata ctg ttg gca tct	1200
Thr Ala Asn Lys Asp His Gln Tyr Ile Tyr Glu Ile Leu Leu Ala Ser	
385 390 395 400	
ggg ctt tta cac aaa gaa cat agt atc acg gca tta cct gct caa ctc	1248
Gly Leu Leu His Lys Glu His Ser Ile Thr Ala Leu Pro Ala Gln Leu	
405 410 415	
caa cca tca aat tat cca atc aat ccg gag ctc ttc ctc att ctt gag	1296
Gln Pro Ser Asn Tyr Pro Ile Asn Pro Glu Leu Phe Leu Ile Leu Glu	
420 425 430	
caa aca aaa cca gac tta gtt ttt gca ttc caa act gtc agt gga act	1344
Gln Thr Lys Pro Asp Leu Val Phe Ala Phe Gln Thr Val Ser Gly Thr	
435 440 445	
aag aaa agt tgt aag cct tac acg ggg aag ctt cac cga aga ctt gtg	1392
Lys Lys Ser Cys Lys Pro Tyr Thr Gly Lys Leu His Arg Arg Leu Val	
450 455 460	
ttt gac ctg gta aac gaa aca ata gct caa aag atg atc atc tgc aga	1440
Phe Asp Leu Val Asn Glu Thr Ile Ala Gln Lys Met Ile Ile Cys Arg	
465 470 475 480	
tct gga agc cag cca gta aag ttt ctt caa tca agg aag ttg agt ggg	1488
Ser Gly Ser Gln Pro Val Lys Phe Leu Gln Ser Arg Lys Leu Ser Gly	
485 490 495	
tgg caa cta ttc aag gat ttg tgc act gag gtt gac agg caa ata aaa	1536
Trp Gln Leu Phe Lys Asp Leu Cys Thr Glu Val Asp Arg Gln Ile Lys	
500 505 510	
tgc acc ggg gag gag gag aat gga aac atg ata tta gat gag gat aca	1584
Cys Thr Gly Glu Glu Glu Asn Gly Asn Met Ile Leu Asp Glu Asp Thr	
515 520 525	
gtc aat gga acg aaa gat tgg atg agc ttc gac act atg cta cat ggc	1632
Val Asn Gly Thr Lys Asp Trp Met Ser Phe Asp Thr Met Leu His Gly	
530 535 540	
atg gtt tgg gag att gaa cga tcc atc ttc aag ggt ctt atc gac gag	1680
Met Val Trp Glu Ile Glu Arg Ser Ile Phe Lys Gly Leu Ile Asp Glu	
545 550 555 560	
gtt atc ggc ggt gag act ata gag aag atg caa ttt ggg caa agg aaa	1728
Val Ile Gly Gly Glu Thr Ile Glu Lys Met Gln Phe Gly Gln Arg Lys	
565 570 575	
ctg cag agg cag ctt tct ttc agt agt ata aac tga atacgcgtcg	1774
Leu Gln Arg Gln Leu Ser Phe Ser Ser Ile Asn	
580 585	

tagtagtcat ttccatggag aagcttataa caactagtaa atgtgacagt ttcttttttt 1834
 ttctttctgaa gactaaactg tacaagtata aatgatcctc aacactagtc ttgctgcctg 1894
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 att cac tgc ctg gca gtt caa atg ctg ctt ctg aga tgc ctg cta atg 96
 Ile His Cys Leu Ala Val Gln Met Leu Leu Leu Arg Cys Leu Leu Met
 20 25 30
 gat ctt gat cga caa aac act gga aag gct aca gtg cta ggt gat gct 144
 Asp Leu Asp Arg Gln Asn Thr Gly Lys Ala Thr Val Leu Gly Asp Ala
 35 40 45
 gcg cga gta ctg cga gat cta atc act caa gtg gaa tct ctc agg cag 192
 Ala Arg Val Leu Arg Asp Leu Ile Thr Gln Val Glu Ser Leu Arg Gln
 50 55 60
 gaa caa tct gct ctt gta tgc gag cgc caa tat gtc agt tcc gag aag 240
 Glu Gln Ser Ala Leu Val Ser Glu Arg Gln Tyr Val Ser Ser Glu Lys
 65 70 75 80
 aat gag ctg caa gag gag aac agt tgc ctc aag tcc caa ata tgc gaa 288
 Asn Glu Leu Gln Glu Glu Asn Ser Ser Leu Lys Ser Gln Ile Ser Glu
 85 90 95
 cta caa acc gag ctc tgc gca agg atg agg agc agc agc ctg agc caa 336
 Leu Gln Thr Glu Leu Cys Ala Arg Met Arg Ser Ser Ser Leu Ser Gln
 100 105 110
 acc agc atc ggg atg tgc gat ccg gca act cac cag cag atg cag atg 384
 Thr Ser Ile Gly Met Ser Asp Pro Ala Thr His Gln Gln Met Gln Met
 115 120 125
 tgg agc agc att ccc cac tta agc tcc gtg gcc atg gcg gcg cgc cca 432
 Trp Ser Ser Ile Pro His Leu Ser Ser Val Ala Met Ala Ala Arg Pro
 130 135 140
 gca agt gca gcg tcc ccg ttg cac ggc cag gag ggc tac tct gct gac 480
 Ala Ser Ala Ala Ser Pro Leu His Gly Gln Glu Gly Tyr Ser Ala Asp
 145 150 155 160

gca Ala	tat Tyr	cat His 50	ttg Leu	gca Ala	gat Asp	cca Pro	act Thr 55	gat Asp	ggc Gly	aga Arg	att Ile 60	acc Thr	cta Leu	cat His	cta Leu	191
aag Lys	att Ile 65	tta Leu	aat Asn	ttg Leu	act Thr 70	gag Glu 75	ctg Leu	gaa Glu	ctc Leu	aac Asn 75	agg Arg	gtg Val	gac Asp	atc Ile	cgt Arg	239
gtt Val 80	ggc Gly	ctg Leu	tct Ser	gga Gly 85	gca Ala	ctg Leu	tat Tyr	tat Tyr	atg Met 90	gat Asp	ggg Gly	ttc Phe	tct Ser	cgc Arg	act Thr 95	287
gtt Val	cgt Arg	cac His	ctt Leu 100	cgg Arg	aat Asn	ctt Leu	gtt Val	tcc Ser	cag Gln 105	gat Asp	cca Pro	gtc Val	caa Gln	agt Ser 110	agt Ser	335
gtg Val	act Thr	gtt Val 115	gga Gly	gtt Val	tca Ser	cat His	ttt Phe 120	gag Glu	aga Arg	tgc Cys	tcg Ser	ctc Leu 125	tgg Trp	gtt Val	caa Gln	383
gtt Val	ttg Leu 130	tat Tyr	tac Tyr	ccg Pro	ttt Phe	tat Tyr	gga Gly 135	agt Ser	agt Ser	gga Gly	tca Ser	aca Thr 140	gac Asp	tat Tyr	gaa Glu	431
gga Gly	gat Asp 145	tat Tyr	gca Ala	gaa Glu	gag Glu	gat Asp 150	tca Ser	cag Gln	atg Met	atg Met	agg Arg 155	cag Gln	aag Lys	cgc Arg	tca Ser	479
cat His 160	cgg Arg	cct Pro	gaa Glu	ctt Leu	ggg Gly 165	gaa Glu	ccg Pro	gtt Val	gtt Val	ttg Leu 170	cgg Arg	tgc Cys	caa Gln	cca Pro	tac Tyr 175	527
aag Lys	ttt Phe	cct Pro	ctc Leu 180	gct Ala	gag Glu	ctc Leu	ctc Leu	cta Leu	cca Pro 185	tta Leu	gag Glu	tgt Cys	tct Ser	cca Pro 190	gtt Val	575
gag Glu	tat Tyr	ttc Phe 195	cgg Arg	cta Leu	tgg Trp	cct Pro	agc Ser	cta Leu 200	cca Pro	gcc Ala	atg Met	gtg Val 205	gag Glu	tgc Cys	act Thr	623
ggc Gly	aca Thr 210	tac Tyr	aca Thr	tat Tyr	gaa Glu	ggc Gly	agt Ser 215	ggg Gly	ttc Phe	aag Lys	gcc Ala	acc Thr 220	gct Ala	gct Ala	cag Gln	671
cag Gln	tat Tyr 225	gac Asp	agc Ser	tct Ser	ccc Pro	ttc Phe 230	ctc Leu	agt Ser	gga Gly	ttg Leu 235	aag Lys	tcg Ser	att Ile	tct Ser	tct Ser	719
aag Lys 240	ccc Pro	ttc Phe	cat His	caa Gln	gtc Val 245	tgc Cys	tca Ser	cat His	ttc Phe 250	atc Ile	cgg Arg	aca Thr	gta Val	gct Ala	gga Gly 255	767
ttc Phe	cag Gln	tta Leu	tgt Cys 260	tat Tyr	gca Ala	gca Ala	aag Lys	aca Thr 265	tgg Trp	ttt Phe	ggg Gly	gga Gly	ttt Phe 270	gtg Val	ggc Gly	815

atg Met	atg Met	ata Ile	ttt Phe	ggg Gly	gca Ala	agt Ser	gaa Glu	gtc Val	agc Ser	cgg Arg	aat Asn	ggt Val	gat Asp	ttg Leu	ggt Gly	863		
275																280	285	
gat Asp	gag Glu	acc Thr	acc Thr	aca Thr	atg Met	atc Ile	tgc Cys	aaa Lys	ttc Phe	gtc Val	atg Met	cgc Arg	gca Ala	tcc Ser	gat Asp	911		
290																295	300	
gaa Glu	tcc Ser	atc Ile	acg Thr	aga Arg	gag Glu	atc Ile	aaa Lys	tcc Ser	gac Asp	ctc Leu	cag Gln	ggc Gly	tgg Trp	ctg Leu	gat Asp	959		
305																310	315	
gat Asp	atc Ile	acc Thr	gac Asp	ggc Gly	gct Ala	gtg Val	gaa Glu	tac Tyr	atg Met	cct Pro	gag Glu	gat Asp	gag Glu	gtg Val	aag Lys	1007		
320																325	330	335
agt Ser	gtg Val	gcc Ala	gcc Ala	gag Glu	cag Gln	ctg Leu	aag Lys	atc Ile	tcc Ser	atg Met	gag Glu	agg Arg	att Ile	gcc Ala	ctg Leu	1055		
340																345	350	
ctc Leu	aag Lys	gca Ala	gcc Ala	agg Arg	cca Pro	aag Lys	gtc Val	cca Pro	ccc Pro	gca Ala	aag Lys	acc Thr	gat Asp	caa Gln	gag Glu	1103		
355																360	365	
gag Glu	gaa Glu	gag Glu	gag Glu	cga Arg	aag Lys	cag Gln	agc Ser	gag Glu	gaa Glu	cta Leu	gat Asp	ggg Gly	ttt Phe	gga Gly	aac Asn	1151		
370																375	380	
ccc Pro	aag Lys	ggc Gly	ccc Pro	tcg Ser	acg Thr	ctc Leu	tcc Ser	aag Lys	ctc Leu	acc Thr	gcg Ala	gag Glu	gag Glu	gct Ala	gag Glu	1199		
385																390	395	
cac His	cgc Arg	gct Ala	ctc Leu	cag Gln	gct Ala	gcc Ala	gtg Val	ctt Leu	cag Gln	gag Glu	tgg Trp	cac His	cag Gln	cta Leu	tgc Cys	1247		
400																405	410	415
aaa Lys	gag Glu	aga Arg	gcc Ala	atg Met	aaa Lys	gcg Ala	cag Gln	tga	ggtcgatttg	gaccgtgtgg						1294		
420																		
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Ala Gly Ala Gly Leu Pro Val His Met Lys Gly Glu Leu Asn Thr Ala	
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ttc ata gga ctg ggg gat gac ggt gga tat ggt ggt ggc tgg gtt cct	144
Phe Ile Gly Leu Gly Asp Asp Gly Gly Tyr Gly Gly Trp Val Pro	
35 40 45	
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Leu Ala Ala Leu Lys Lys Val Leu Arg Gly Ile Leu Lys Tyr Leu Gly	
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Val Leu Trp Leu Phe Ala Gln Leu Pro Glu Leu Lys Glu Ile Leu	
65 70 75 80	
gga tca atc tta aag gac aat gaa ggt gct ctc ttg aat ttg gat caa	288
Gly Ser Ile Leu Lys Asp Asn Glu Gly Ala Leu Leu Asn Leu Asp Gln	
85 90 95	
gag cag cct gca ctc cgg ttc tat gtc gga gga tat gta ttt gca gta	336
Glu Gln Pro Ala Leu Arg Phe Tyr Val Gly Gly Tyr Val Phe Ala Val	
100 105 110	
agt gtc cat cgg gtt caa ctg ctt cta caa gtt ttg agt gtg aaa aga	384
Ser Val His Arg Val Gln Leu Leu Leu Gln Val Leu Ser Val Lys Arg	
115 120 125	
ttt cac cac cag caa cag cag cag cag gct caa agc aat gct cag gaa	432
Phe His His Gln Gln Gln Gln Gln Ala Gln Ser Asn Ala Gln Glu	
130 135 140	
gag cta gca gca gtt gaa atc aat gaa ata tgt gac tac ttt agc aga	480
Glu Leu Ala Ala Val Glu Ile Asn Glu Ile Cys Asp Tyr Phe Ser Arg	
145 150 155 160	
cgt gtt gcc tcc gaa cca tat gat gct tct aga gtt gct tct ttt atc	528
Arg Val Ala Ser Glu Pro Tyr Asp Ala Ser Arg Val Ala Ser Phe Ile	
165 170 175	
act ttg ctt aca ttg cca att ttg gtt ctg cgc gag ttt tta aag ctg	576
Thr Leu Leu Thr Leu Pro Ile Leu Val Leu Arg Glu Phe Leu Lys Leu	
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att aca tgg aag aaa ggt ctt tcc ccg gtt cat ggg gac att gct act	624
Ile Thr Trp Lys Lys Gly Leu Ser Pro Val His Gly Asp Ile Ala Thr	

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cat	cat	gat	aga	gcc	cac	agt	tca	gta	gaa	ttt	gcc	ctg	aca	ttt	gta	768		
His	His	Asp	Arg	Ala	His	Ser	Ser	Val	Glu	Phe	Ala	Leu	Thr	Phe	Val			
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ctt	gac	cat	gct	ctt	att	cct	cac	atg	aat	gta	gct	gga	gga	gct	gcc	816		
Leu	Asp	His	Ala	Leu	Ile	Pro	His	Met	Asn	Val	Ala	Gly	Gly	Ala	Ala			
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tgg	ctt	cca	tat	tgt	gta	tct	gtg	aaa	ctt	cgc	tat	tct	ttt	ggg	gac	864		
Trp	Leu	Pro	Tyr	Cys	Val	Ser	Val	Lys	Leu	Arg	Tyr	Ser	Phe	Gly	Asp			
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aac	aat	cat	ata	gct	ttc	ctt	gct	atg	aat	ggg	agc	cat	ggg	ggg	aga	912		
Asn	Asn	His	Ile	Ala	Phe	Leu	Ala	Met	Asn	Gly	Ser	His	Gly	Gly	Arg			
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gcc	tgc	tgg	ttg	cag	ttt	gag	gag	tgg	gaa	aga	tgt	aag	cag	aag	gtt	960		
Ala	Cys	Trp	Leu	Gln	Phe	Glu	Glu	Trp	Glu	Arg	Cys	Lys	Gln	Lys	Val			
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tca	aga	gct	gtg	gaa	act	gtg	aat	ggg	tct	ggg	gta	gct	gga	gag	gta	1008		
Ser	Arg	Ala	Val	Glu	Thr	Val	Asn	Gly	Ser	Gly	Val	Ala	Gly	Glu	Val			
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ggc	caa	gga	agg	ctg	cga	atg	ggt	gca	gag	atg	atc	caa	aag	cag	ctt	1056		
Gly	Gln	Gly	Arg	Leu	Arg	Met	Val	Ala	Glu	Met	Ile	Gln	Lys	Gln	Leu			
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caa	ctc	tgt	cta	caa	cag	cta	aga	gat	gac	cca	ctt	tct	gca	ggc	tct	1104		
Gln	Leu	Cys	Leu	Gln	Gln	Leu	Arg	Asp	Asp	Pro	Leu	Ser	Ala	Gly	Ser			
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act	gca	tca	tga	acttgcttg	aatgagctct	atcaaggcca	ttgatgtctg									1156		
Thr	Ala	Ser																
370																		
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tagc	agtgac	agtttcgcct	gaggcttgct	cagatgacaa	ttttgtacag	tataaatgg										1276		
ggc	ggttgac	tctgatggac	ctttagttag	cccatttgaa	cgtggcctgt	aacatagcta										1336		
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tggt	gtctg	tatcatctac	tgtaatcgtg	tccttttct	ccctttctga	tggatagttc										1456		
at	ttttggat	tcgttatcat	ctttcttctg	tctgtactat	gttaatctag	acattgggtg										1516		

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Pro Gly Glu Thr Ala Gln Ser Ile Asp Ala Pro Lys Thr Phe Cys Asp
20 25 30

tca ggg gag acg ggt aga cta tgt gga agt tca aca tgc ttt agt tgc 143
Ser Gly Glu Thr Gly Arg Leu Cys Gly Ser Ser Thr Cys Phe Ser Cys
35 40 45

aac aat ata cga gaa atg cag gct cag aaa gtc aga gga aca ctt ttg 191
Asn Asn Ile Arg Glu Met Gln Ala Gln Lys Val Arg Gly Thr Leu Leu
50 55 60

ata cca tgc cga aca gca atg aga gga agc ttc cca ctt aat ggg acg 239
Ile Pro Cys Arg Thr Ala Met Arg Gly Ser Phe Pro Leu Asn Gly Thr
65 70 75

tat ttt caa gtt aat gag gta ttt gct gac cat tgc tca agt caa aat 287
Tyr Phe Gln Val Asn Glu Val Phe Ala Asp His Cys Ser Ser Gln Asn
80 85 90 95

cca att gat gtc cca cga agt tgg att tgg gac ctc cca aga cga act 335
Pro Ile Asp Val Pro Arg Ser Trp Ile Trp Asp Leu Pro Arg Arg Thr
100 105 110

gtt tac ttt gga acc tca gtt cct aca ata ttc aga ggt tta acg act 383
Val Tyr Phe Gly Thr Ser Val Pro Thr Ile Phe Arg Gly Leu Thr Thr
115 120 125

gaa gag ata caa cga tgc ttt tgg aga gga ttt gtt tgc gtg agg ggc 431
Glu Glu Ile Gln Arg Cys Phe Trp Arg Gly Phe Val Cys Val Arg Gly
130 135 140

ttt gat agg aca gtg agg gca cca agg ccc ctt tat gca agg ttg cat 479
Phe Asp Arg Thr Val Arg Ala Pro Arg Pro Leu Tyr Ala Arg Leu His
145 150 155


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caa tct ggg agg atg tat tac ctc aac cgg aag acg ctg aag aag agc 335
Gln Ser Gly Arg Met Tyr Tyr Leu Asn Arg Lys Thr Leu Lys Lys Ser
100 105 110

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Trp Val Arg Pro Gln Val Gln Ser Val Asn Leu Asp Leu Asn Ile Ser
115 120 125

acg gct gcc gcc atc gac aac tgt gcc gcc aac ggt gct gct gcc gct 431
Thr Ala Ala Ala Ile Asp Asn Cys Ala Ala Asn Gly Ala Ala Ala Ala
130 135 140

gct tcc gac gac gag gac gag cca agg aaa ccc gct ggc act ttg ttc 479
Ala Ser Asp Asp Glu Asp Glu Pro Arg Lys Pro Ala Gly Thr Leu Phe
145 150 155

tct gga ggc agc atg gtg gcc gtg ccg tgc gcc aac tgc cat ctc cta 527
Ser Gly Gly Ser Met Val Ala Val Pro Cys Ala Asn Cys His Leu Leu
160 165 170 175

gtc atg ctg tgc aag tcc tcc ccg tcc tgc ccc aac tgc aag ttc gtg 575
Val Met Leu Cys Lys Ser Ser Pro Ser Cys Pro Asn Cys Lys Phe Val
180 185 190

cag cct ctg gca cct gct gtg ccg cct gcg gcg gtg gcc cat tgg agg 623
Gln Pro Leu Ala Pro Ala Val Pro Pro Ala Ala Val Ala His Trp Arg
195 200 205

atc gat gcc gcc gtc aag ccg ctg gag acc ctg agc ctt ctc cat tag 671
Ile Asp Ala Ala Val Lys Pro Leu Glu Thr Leu Ser Leu Leu His
210 215 220

gcacatgcac ttcaccggca gcagattgta gaaaggaaat cgtagttacg tagtagtggt 731

gcatgggtta gtattactat tacctgggta atgcatgagc ggtcgaatga aaattggaaa 791

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ggctggaccg caacccaatt ggggggttaat tgggattgct actccgcggc tgcctgtccc 180

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Gln	Gln	Lys	Pro	Thr	Arg	Val	Ser	Leu	Ser	Tyr	Glu	Glu	Ile	Ser	Lys	
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ctc	ttc	tcc	ctc	ccc	atc	gct	gag	gcg	gcc	tcc	atc	ctc	gga	gtc	tgc	288
Leu	Phe	Ser	Leu	Pro	Ile	Ala	Glu	Ala	Ala	Ser	Ile	Leu	Gly	Val	Cys	
				85					90					95		
acc	agt	gtc	ttg	aag	agg	atc	tgc	cgc	acc	cac	ggg	att	gtt	agg	tgg	336
Thr	Ser	Val	Leu	Lys	Arg	Ile	Cys	Arg	Thr	His	Gly	Ile	Val	Arg	Trp	
			100					105					110			
cca	tat	cgt	aag	ctt	gtt	tct	ggg	aaa	gct	ggg	gat	gac	aca	aaa	ggt	384
Pro	Tyr	Arg	Lys	Leu	Val	Ser	Gly	Lys	Ala	Gly	Asp	Asp	Thr	Lys	Gly	
		115					120					125				
cct	gat	agc	gac	aaa	gcc	aac	gaa	ctc	ctt	gag	gta	tca	aaa	atc	gcg	432
Pro	Asp	Ser	Asp	Lys	Ala	Asn	Glu	Leu	Leu	Glu	Val	Ser	Lys	Ile	Ala	
	130					135					140					
aaa	caa	aag	gct	ccc	agt	gca	tca	ggc	cca	tca	gta	gtg	tca	tca	agc	480
Lys	Gln	Lys	Ala	Pro	Ser	Ala	Ser	Gly	Pro	Ser	Val	Val	Ser	Ser	Ser	
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Thr	Ser	Gln	Gly	Ala	Ala	Lys	Ser	Gln	Gln	Gly	Asn	Ser	Lys	Ala	Gly	
				165					170					175		
cag	ttt	tca	gtt	tcg	cca	cca	aca	ggg	aaa	cat	aac	gca	tca	cta	agt	576
Gln	Phe	Ser	Val	Ser	Pro	Pro	Thr	Gly	Lys	His	Asn	Ala	Ser	Leu	Ser	
			180					185					190			
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Leu	Thr	His	Ser	Gln	Ala	Lys	Ala	Ile	Pro	Cys	Tyr	Met	Asp	Asp	Phe	
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Lys	Tyr	Gly	Phe	Pro	Ser	Ser	Gly	Leu	Ser	Cys	Glu	Thr	Met	Lys	Trp	
	210					215					220					
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Trp	Gly	Thr	Ser	Ser	Asp	Thr	Asp	Tyr	Val	Pro	Thr	Lys	Asp	Gly	Ser	
225					230					235					240	
cat	gaa	ccc	cat	gaa	tca	aca	aca	cat	gag	cca	tca	aag	ggc	atg	act	768
His	Glu	Pro	His	Glu	Ser	Thr	Thr	His	Glu	Pro	Ser	Lys	Gly	Met	Thr	
				245					250					255		
gat	gat	gac	gag	ttg	gac	tgg	gga	gca	gat	gaa	gcg	gaa	gct	gaa	gct	816
Asp	Asp	Asp	Glu	Leu	Asp	Trp	Gly	Ala	Asp	Glu	Ala	Glu	Ala	Glu	Ala	
			260					265					270			
gat	ggc	act	gtt	acg	gca	gag	gca	tcg	gca	cag	ctg	tgc	tcg	ctg	aga	864
Asp	Gly	Thr	Val	Thr	Ala	Glu	Ala	Ser	Ala	Gln	Leu	Cys	Ser	Leu	Arg	

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Arg Lys Ala Val Asp Asp Gly Arg Lys Leu Leu Asn Gly His Asn Arg			
290	295	300	
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Arg Gly Gln Glu Phe Ser Arg Leu Asn Lys Arg Gln Lys Thr Ala Leu			
305	310	315	320
gcc cag gta ttt ggg gct tca ctg cca gaa tgt tgt att act cgt gtc			1008
Ala Gln Val Phe Gly Ala Ser Leu Pro Glu Cys Cys Ile Thr Arg Val			
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gat gcc ctg ggg cga aaa ttt acc cgc ttt gga cat caa gcc aag gaa		95
Asp Ala Leu Gly Arg Lys Phe Thr Arg Phe Gly His Gln Ala Lys Glu		
	20	25
gac agg cag gcc gcc att ttc cgg tct gag aat ggg aac gta tgg cag		143
Asp Arg Gln Ala Ala Ile Phe Arg Ser Glu Asn Gly Asn Val Trp Gln		
	35	40
gta aaa atc ttt ggt gaa gac aag acg ggc aag cgg tca ggg cag tat		191
Val Lys Ile Phe Gly Glu Asp Lys Thr Gly Lys Arg Ser Gly Gln Tyr		
	50	55
cta gca ccg aca ggc ata ggg gac gtg ccc tat ctg cca aca att ccc		239
Leu Ala Pro Thr Gly Ile Gly Asp Val Pro Tyr Leu Pro Thr Ile Pro		
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cgc cgg atc att ttg gcg atc gcc gaa aag cat ggg gtc aaa cca ccg		287
Arg Arg Ile Ile Leu Ala Ile Ala Glu Lys His Gly Val Lys Pro Pro		
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Pro Ala Pro Tyr Leu Pro Arg Asn His Met Gly Arg Arg Ser Phe Met	
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Ser Lys Pro Val Tyr Pro Leu Val Phe Arg Asn Pro Val Ser Glu Ser	
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gaa gcg tgc agg atg ctt gag gtt ggt aat gcc ggg cga gcg aca cca	287
Glu Ala Cys Arg Met Leu Glu Val Gly Asn Ala Gly Arg Ala Thr Pro	
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Ser Asp Asp Ser Gln Ala Ser Pro Leu Trp Arg Arg Ser Leu Ala Ser	
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cca gat ctc aag ttc cac aat gca ccg aat gaa ctt ggg aag atg gaa	383
Pro Asp Leu Lys Phe His Asn Ala Pro Asn Glu Leu Gly Lys Met Glu	
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acc tca ccc gaa ccg aac aca agc tca aga agg gaa ggg ttc aga tgg	431
Thr Ser Pro Glu Pro Asn Thr Ser Ser Arg Arg Glu Gly Phe Arg Trp	
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Ser Asn Ala Ser Ser Tyr Asp Phe Gly Tyr Asp Gly Asp Ala Ile Asp	
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Ile Ser Asp His Ile Ser Ile Glu Ser Gln Arg Ser Pro Thr Ser Ser	
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Ala Arg Phe Leu Lys Cys Gly Leu Cys Glu Arg Phe Leu His Gln Lys	
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Ser Pro Trp Thr Ser Asn Arg Ile Val Arg Asn Ala Asp Met Pro Val	
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Ala Ala Val Leu Pro Cys Arg His Val Phe His Ala Asp Cys Leu Glu	
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Glu Ser Thr Ala Lys Thr Glu Val His Glu Pro Pro Cys Pro Leu Cys	
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gcg cga gcc act gac gat gaa ggg cac gtg tcg ttc tca gaa cct ctg	767
Ala Arg Ala Thr Asp Asp Glu Gly His Val Ser Phe Ser Glu Pro Leu	
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His Val Ala Leu Arg Ser Ala Arg Arg Asn Leu Ser Leu Gly Thr Gly	
260 265 270	

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275 280 285	
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305 310 315	
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320 325 330 335	
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Met	
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5 10 15	
gct ctc gcc gtc ctg gag gcc acg gtc cct gct cgt tca tgg cgc gct Ala Leu Ala Val Leu Glu Ala Thr Val Pro Ala Arg Ser Trp Arg Ala	215
20 25 30	

ccg agt ccc acc ccg agg cac gaa gcg agg agg ttc gag cag aag acg Pro Ser Pro Thr Pro Arg His Glu Ala Arg Arg Phe Glu Gln Lys Thr 35 40 45	263
gac agg ttc tgg gag tac cag gag cag agc aat acc tgg gta caa gta Asp Arg Phe Trp Glu Tyr Gln Glu Gln Ser Asn Thr Trp Val Gln Val 50 55 60 65	311
cgc gcg ccg ttc gac ctc atg tcc tgc atc aac ggc acc tgc aca aag Arg Ala Pro Phe Asp Leu Met Ser Cys Ile Asn Gly Thr Cys Thr Lys 70 75 80	359
gta gga tcg atc ggg cgg ctg gcg agg gag cct gga cga cac ggc ctt Val Gly Ser Ile Gly Arg Leu Ala Arg Glu Pro Gly Arg His Gly Leu 85 90 95	407
cct ccc gtc cag agc cag gag gag gag gag gaa gac acg cgg cgg gtt Pro Pro Val Gln Ser Gln Glu Glu Glu Glu Glu Asp Thr Arg Arg Val 100 105 110	455
cag gga gat ggt gca gaa gaa gac cct gtc ctg cct gta agg agg aga Gln Gly Asp Gly Ala Glu Glu Asp Pro Val Leu Pro Val Arg Arg Arg 115 120 125	503
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cag ttg cag cta aat gag cat gcc cag cct atc tgg aca gag atg gca Gln Leu Gln Leu Asn Glu His Ala Gln Pro Ile Trp Thr Glu Met Ala 195 200 205	743
ttc aac tca agc cag cag tca gcg aat ctt gga tta aaa aca caa agt Phe Asn Ser Ser Gln Gln Ser Ala Asn Leu Gly Leu Lys Thr Gln Ser 210 215 220 225	791
caa gct atg cgt ata aga aat ggg att gta tcc aat gat gga agg aaa Gln Ala Met Arg Ile Arg Asn Gly Ile Val Ser Asn Asp Gly Arg Lys 230 235 240	839
ctt ttc ctg tct atc atg aat gga tcc ctg ctt gag gta aca gaa att Leu Phe Leu Ser Ile Met Asn Gly Ser Leu Leu Glu Val Thr Glu Ile 245 250 255	887

cag cct cta agg tgg aat tac cat ggg cgt cct cca ggt gca gac gtg	935
Gln Pro Leu Arg Trp Asn Tyr His Gly Arg Pro Pro Gly Ala Asp Val	
260 265 270	
tcg tat ata tct gat gct gga aat ctg cgg cca ggg acc ctg ttc aca	983
Ser Tyr Ile Ser Asp Ala Gly Asn Leu Arg Pro Gly Thr Leu Phe Thr	
275 280 285	
gta agt tcc act gga gac ctc tat gag ttt gac aaa gaa aca aag cca	1031
Val Ser Ser Thr Gly Asp Leu Tyr Glu Phe Asp Lys Glu Thr Lys Pro	
290 295 300 305	
tca tgg aaa aag cat ata tgg agt gaa gaa ctg gcg aaa aat atc tca	1079
Ser Trp Lys Lys His Ile Trp Ser Glu Glu Leu Ala Lys Asn Ile Ser	
310 315 320	
tta aaa tca tcg gct ggc ttt gct ttg cat ggt ttg tca ggg tct aac	1127
Leu Lys Ser Ser Ala Gly Phe Ala Leu His Gly Leu Ser Gly Ser Asn	
325 330 335	
tca gtg tct ctt ttc ctg ata agc aag gat ggc ctt tta gtg gag cgg	1175
Ser Val Ser Leu Phe Leu Ile Ser Lys Asp Gly Leu Leu Val Glu Arg	
340 345 350	
cgc ttg cat aga agg aag tgg aag tgg gac aaa cat gga gct cct acg	1223
Arg Leu His Arg Arg Lys Trp Lys Trp Asp Lys His Gly Ala Pro Thr	
355 360 365	
ggg cag aga ctt agt tca att gca gaa gtt cag aag gat gaa ctt aat	1271
Gly Gln Arg Leu Ser Ser Ile Ala Glu Val Gln Lys Asp Glu Leu Asn	
370 375 380 385	
gat gcg act tca atg ttt tta acg aca acc aca gga aaa gta tat gag	1319
Asp Ala Thr Ser Met Phe Leu Thr Thr Thr Gly Lys Val Tyr Glu	
390 395 400	
tat cag ttt cca aaa tat aca ggt ggg gcc cag agc aat aag ata aga	1367
Tyr Gln Phe Pro Lys Tyr Thr Gly Gly Ala Gln Ser Asn Lys Ile Arg	
405 410 415	
gga caa tgg ata aat cac atg tcc cct gag cat gca aag gtt gca aga	1415
Gly Gln Trp Ile Asn His Met Ser Pro Glu His Ala Lys Val Ala Arg	
420 425 430	
aac gtc cca ggt gta cat gtt caa gtc ggc aga atg gta ttc cca cta	1463
Asn Val Pro Gly Val His Val Gln Val Gly Arg Met Val Phe Pro Leu	
435 440 445	
gat gat ggt agg ctt ggg gaa cta cat ttt cct ggg atg ggg ggt act	1511
Asp Asp Gly Arg Leu 455 Glu Leu His Phe 460 Gly Met Gly Gly Thr 465	
gat ttt ggt ccg agt gcc caa agt acc ata aga aga aaa cta tca aac	1559
Asp Phe Gly Pro Ser Ala Gln Ser Thr Ile Arg Arg Lys Leu Ser Asn	
470 475 480	
aag tac gag tgg tcc atc cta gac gca cca gaa aca gaa ggt tgg aat	1607

Lys	Tyr	Glu	Trp	Ser	Ile	Leu	Asp	Ala	Pro	Glu	Thr	Glu	Gly	Trp	Asn		
			485					490					495				
gca	gaa	tat	tgc	acc	gaa	gag	cac	ggt	ccg	aca	aat	tgt	att	agt	gga	1655	
Ala	Glu	Tyr	Cys	Thr	Glu	Glu	His	Gly	Pro	Thr	Asn	Cys	Ile	Ser	Gly		
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gca	aag	aat	ata	gct	gca	gac	aca	gaa	tca	aat	gac	ttg	agc	aat	aac	1703	
Ala	Lys	Asn	Ile	Ala	Ala	Asp	Thr	Glu	Ser	Asn	Asp	Leu	Ser	Asn	Asn		
		515				520					525						
cca	cct	tcc	agg	agg	cgt	aaa	gta	gaa	gag	aag	cag	cac	tac	cta	aat	1751	
Pro	Pro	Ser	Arg	Arg	Arg	Lys	Val	Glu	Glu	Lys	Gln	His	Tyr	Leu	Asn		
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gtt	aac	aga	tac	cag	cag	agt	gat	gaa	act	gaa	tca	tac	aac	ttt	cta	1799	
Val	Asn	Arg	Tyr	Gln	Gln	Ser	Asp	Glu	Thr	Glu	Ser	Tyr	Asn	Phe	Leu		
				550					555					560			
tca	agg	acc	att	gat	ctt	aac	ttc	cac	atg	cgg	gtg	atg	cat	gca	gac	1847	
Ser	Arg	Thr	Ile	Asp	Leu	Asn	Phe	His	Met	Arg	Val	Met	His	Ala	Asp		
			565					570					575				
aga	tcg	ctt	ttc	ctt	ata	gca	gac	aat	gga	ttg	act	ttt	gaa	tat	cta	1895	
Arg	Ser	Leu	Phe	Leu	Ile	Ala	Asp	Asn	Gly	Leu	Thr	Phe	Glu	Tyr	Leu		
		580					585					590					
aac	agc	aat	ggt	gtt	tgg	ttg	tgg	tta	aga	cat	gaa	cat	gtt	aca	gcc	1943	
Asn	Ser	Asn	Gly	Val	Trp	Leu	Trp	Leu	Arg	His	Glu	His	Val	Thr	Ala		
		595				600					605						
atg	aaa	gga	aca	cta	gga	agc	tac	aat	ggc	agt	ttg	tat	ctt	gtc	gac	1991	
Met	Lys	Gly	Thr	Leu	Gly	Ser	Tyr	Asn	Gly	Ser	Leu	Tyr	Leu	Val	Asp		
		610			615				620					625			
gtg	cat	ggg	aac	tta	cac	att	aga	gaa	aga	aat	gga	gat	gaa	ctg	ttg	2039	
Val	His	Gly	Asn	Leu	His	Ile	Arg	Glu	Arg	Asn	Gly	Asp	Glu	Leu	Leu		
				630				635						640			
tgg	att	aac	tgc	aca	gcg	atg	aag	aag	gga	aga	cag	gtt	gca	agt	ggg	2087	
Trp	Ile	Asn	Cys	Thr	Ala	Met	Lys	Lys	Gly	Arg	Gln	Val	Ala	Ser	Gly		
			645					650					655				
tct	cca	tgg	gat	ggc	atc	cct	ggt	tta	ttg	cgc	aga	gtg	aca	aca	gat	2135	
Ser	Pro	Trp	Asp	Gly	Ile	Pro	Gly	Leu	Leu	Arg	Arg	Val	Thr	Thr	Asp		
		660					665					670					
gat	gca	ctc	ttc	ttt	gtc	aac	aag	cga	ggc	agg	ctg	cta	cag	ttc	acg	2183	
Asp	Ala	Leu	Phe	Phe	Val	Asn	Lys	Arg	Gly	Arg	Leu	Leu	Gln	Phe	Thr		
		675				680					685						
gtt	gcg	ctg	cgg	aaa	ttc	aag	tgg	aag	gac	tgc	cac	agt	cct	cct	gac	2231	
Val	Ala	Leu	Arg	Lys	Phe	Lys	Trp	Lys	Asp	Cys	His	Ser	Pro	Pro	Asp		
		690			695				700						705		
acc	aag	att	gct	ttc	ata	gtg	gac	cag	gag	gtc	ttc	aga	aga	aac	atc	2279	
Thr	Lys	Ile	Ala	Phe	Ile	Val	Asp	Gln	Glu	Val	Phe	Arg	Arg	Asn	Ile		

gagggactgc acggcatttc attagaatgg aatagttagg atttggacca aggaggaaga 1922
gactaaactg ctcaatatag tttttcctct ttcttttgag aaagttcttt ttcccagctc 1982
tgtttttgac ctgccggctt tgtttttcta cattttatcct tcttgtgaga ctttgaccat 2042
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<213> Zea mays

<220>
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<222> (183)..(686)

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aggccaccgc catcagcagt ccaatacagt gacctgacct ccacgcgaag ccaccaccac 120
aactccacaa gatctagaac ctaagaacct gcagaggaga ggaagaggag cttggggagg 180
ag atg gcc gcc gcc gag gcc gag agg tgg gtg ggg cta gca acg gac 227
Met Ala Gly Ala Glu Gly Glu Arg Trp Val Gly Leu Ala Thr Asp
1 5 10 15
ttc tcg gag ggg agc cgg gcg gcg ctg cgg tgg gcg gcg gcc aac ctg 275
Phe Ser Glu Gly Ser Arg Ala Ala Leu Arg Trp Ala Ala Ala Asn Leu
20 25 30
ctg cga gcc gcc gac cac ctg ctg ctg ctg cac gtc atc aag gag ccc 323
Leu Arg Ala Gly Asp His Leu Leu Leu Leu His Val Ile Lys Glu Pro
35 40 45
gac tac gag cag agc gag gcc atc ctc tgg gaa tcc acc gcc tcc ccg 371
Asp Tyr Glu Gln Ser Glu Ala Ile Leu Trp Glu Ser Thr Gly Ser Pro
50 55 60
ttg att ccc ctc tcg gaa ttc tct gac cct atc att gcg aag aaa tat 419
Leu Ile Pro Leu Ser Glu Phe Ser Asp Pro Ile Ile Ala Lys Lys Tyr
65 70 75
gga gca aag ccg gac ata gaa acc ttg gac atc ctg aac act aca gct 467
Gly Ala Lys Pro Asp Ile Glu Thr Leu Asp Ile Leu Asn Thr Thr Ala
80 85 90 95
acc cag aag gat atc gtg gtg gtt gtg aaa gtc ctg tgg ggt gat ccg 515
Thr Gln Lys Asp Ile Val Val Val Val Lys Val Leu Trp Gly Asp Pro
100 105 110
cgt gag aag ctc tgt caa gtt atc cat gat acc ccg ctg agc tgc ttg 563

	35	40	45	
aac gta gca ggg caa aag ctg tac aag aag tgt gga ttt gtt tat gaa				551
Asn Val Ala Gly Gln Lys Leu Tyr Lys Lys Cys Gly Phe Val Tyr Glu				
50	55	60		
ggc gaa gaa cct gca tgg aag ggt agg ttt ctg ggg aga cca agg agg				599
Gly Glu Glu Pro Ala Trp Lys Gly Arg Phe Leu Gly Arg Pro Arg Arg				
65	70	75		
ctg ctt ctttggttg atatgagcaa agtgcttgct cgatcgtgca tgtaaataca				655
Leu Leu				
80				
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agacctggcc agcccaggcg tggaggtgct cgtctcctcc gccgcgccgg gaccggcg				178
atg aac ggc ggg ctc cct gga ttc cac aat gcg ccg gcg tca aag gcc				226
Met Asn Gly Gly Leu Pro Gly Phe His Asn Ala Pro Ala Ser Lys Ala				
1	5	10	15	
gtg gtc gtc gcc gca ggt ctc ttc tcc gtc gcc ttt ggc ttc cgc ggc				274
Val Val Val Ala Ala Gly Leu Phe Ser Val Ala Phe Gly Phe Arg Gly				
20	25	30		
cac tcc ctc aac ctc ggc ctt gcc tac cag agt gtt tat gaa aag ctg				322
His Ser Leu Asn Leu Gly Leu Ala Tyr Gln Ser Val Tyr Glu Lys Leu				
35	40	45		
agt gta tgg aga ctg atc acc tca ttt ttt gct ttt tcg tca acc ccc				370
Ser Val Trp Arg Leu Ile Thr Ser Phe Phe Ala Phe Ser Ser Thr Pro				
50	55	60		
gag ctg atc ttt gga gca gtc ctg ctg tac tac ttt aga gtg ttc gaa				418
Glu Leu Ile Phe Gly Ala Val Leu Leu Tyr Tyr Phe Arg Val Phe Glu				
65	70	75	80	
cga caa ata ggt tct aac aag tat gct gtc ttc att atc ttc tca acc				466
Arg Gln Ile Gly Ser Asn Lys Tyr Ala Val Phe Ile Ile Phe Ser Thr				
85	90	95		

atttcagagt aagatacaat ttttctgtac tgttataata gacccttggt ttctattctg 1455
 gtttttaagt tttgatggtg gtagtaagca ttcggtatctt cctagtgaaa tttttatact 1515
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<400> 39

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 Ala Arg Gly Ser Ala His Tyr Arg Thr Phe Trp Val Thr Asp Ser
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cat tat tta aca gca acc ggg ccg gcg atc gcc ata ttt acc aac ccg 95
 His Tyr Leu Thr Ala Thr Gly Pro Ala Ile Ala Ile Phe Thr Asn Pro
 20 25 30

acc aaa caa ggc tat gac gac gga ctg ggc gaa aaa atc att ggc acg 143
 Thr Lys Gln Gly Tyr Asp Asp Gly Leu Gly Glu Lys Ile Ile Gly Thr
 35 40 45

ttt ggc aac tgt gct ggg gga aca acc ccc tgg ggg aca gtg tta agc 191
 Phe Gly Asn Cys Ala Gly Gly Thr Thr Pro Trp Gly Thr Val Leu Ser
 50 55 60

gca gag gaa aat ttc caa agc cag gtt cca gaa gca gtc tat gcc gat 239
 Ala Glu Glu Asn Phe Gln Ser Gln Val Pro Glu Ala Val Tyr Ala Asp
 65 70 75

ggc tcc gcc gta gat ccg gcc caa tgt ccg ctt aaa ata agt acc aac 287
 Gly Ser Ala Val Asp Pro Ala Gln Cys Pro Leu Lys Ile Ser Thr Asn
 80 85 90 95

ggg ttg agt ggc caa ggc aat gtg ttt ggc ttg gcg ggc aat aaa tat 335
 Gly Leu Ser Gly Gln Gly Asn Val Phe Gly Leu Ala Gly Asn Lys Tyr
 100 105 110

ggc tgg atg gta gaa att gac ccg gcc aat gcc aac gat tac ggc gtc 383
 Gly Trp Met Val Glu Ile Asp Pro Ala Asn Ala Asn Asp Tyr Gly Val
 115 120 125

aaa cat acg gcc ctt gga cgc ttt cgc cat gaa gct gtg gcg gtg cgg 431
 Lys His Thr Ala Leu Gly Arg Phe Arg His Glu Ala Val Ala Val Arg
 130 135 140

35	40	45	
gac ttc ttg gag gac cct aat cag ccc gag aac gag ctg gtg agc ttg			193
Asp Phe Leu Glu Asp Pro Asn Gln Pro Glu Asn Glu Leu Val Ser Leu			
50	55	60	
ctg cag aac ctg gca gac atg gat gtt acc tac aac gca ctc cag gag			241
Leu Gln Asn Leu Ala Asp Met Asp Val Thr Tyr Asn Ala Leu Gln Glu			
65	70	75	80
act gac atc ggg cgg cag gtt aat ggt ctg cgc aag cat cct tcg gcc			289
Thr Asp Ile Gly Arg Gln Val Asn Gly Leu Arg Lys His Pro Ser Ala			
	85	90	95
gag gtc agg cgg ctg gtg aag cag ctc atc agg aag tgg aag gag ata			337
Glu Val Arg Arg Leu Val Lys Gln Leu Ile Arg Lys Trp Lys Glu Ile			
	100	105	110
gtg gac gac tgg gtg cgc ctg gac aat tcc ggc ggt gac ggc agt gcc			385
Val Asp Asp Trp Val Arg Leu Asp Asn Ser Gly Gly Asp Gly Ser Ala			
	115	120	125
tct gtt atg act gat ggt gac tcc cca cat aaa atc caa ggc aga agc			433
Ser Val Met Thr Asp Gly Asp Ser Pro His Lys Ile Gln Gly Arg Ser			
	130	135	140
cac caa agc cct cgg gtt tcg ggg ttt cag tat tct cca agc cca cag			481
His Gln Ser Pro Arg Val Ser Gly Phe Gln Tyr Ser Pro Ser Pro Gln			
	145	150	155
agg ttt aat ggt tca act tca gag atg gct aac aat ggg ttt gag tca			529
Arg Phe Asn Gly Ser Thr Ser Glu Met Ala Asn Asn Gly Phe Glu Ser			
	165	170	175
aca atg gat gcg aag cgt agg gcc agc cct gta cca gca cat cat aac			577
Thr Met Asp Ala Lys Arg Arg Ala Ser Pro Val Pro Ala His His Asn			
	180	185	190
tcc agg cag atg aac aac aat cat cat tct act act att acc acc agc			625
Ser Arg Gln Met Asn Asn Asn His His Ser Thr Thr Ile Thr Thr Ser			
	195	200	205
acg tca tct gct cca gct ttc tcg gtg cag aaa gtg aca agg gag caa			673
Thr Ser Ser Ala Pro Ala Phe Ser Val Gln Lys Val Thr Arg Glu Gln			
	210	215	220
aag cag agt ctt gtg gac ctt gac agg ctt gat tct gcc agg aag agg			721
Lys Gln Ser Leu Val Asp Leu Asp Arg Leu Asp Ser Ala Arg Lys Arg			
	225	230	235
ctc cag gag aat tac caa gaa gca caa aat gcc aaa aag cag agg aca			769
Leu Gln Glu Asn Tyr Gln Glu Ala Gln Asn Ala Lys Lys Gln Arg Thr			
	245	250	255
atc caa gtg atg gac atc aat gac ata cca aag ccg aag agc aga aac			817
Ile Gln Val Met Asp Ile Asn Asp Ile Pro Lys Pro Lys Ser Arg Asn			
	260	265	270

gct ttc atc cgc aag agc ggc agc ggt ggg ctc ccg gcg agg cac cga 865
Ala Phe Ile Arg Lys Ser Gly Ser Gly Gly Leu Pro Ala Arg His Arg
275 280 285

tag cctaacctcc ttcgtcggct ggatatctgc gacacttgcg aagttgtgcc 918

ctagaaccgc aacgggaaag aaaaagaagc aaacgggttc ttgttctttt tttccctgta 978

ccttgactgc ctaggtttac ctccagtgtgta atattgtcag gtacataagg gtgaaatgat 1038

atgatgtttc tcgaggaaaa agaaagaaat tagtcaactgt ttttgctatg gtttggttgc 1098

tgttattgct gttggtcagt gctggatata atatgcataa aatgtatcaa gcctgcacac 1158

at 1160

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<213> Zea mays

<400> 44

Phe Cys Glu Cys Ile Phe Val Val Leu Gln Gln Gln Gly Pro Asp Tyr
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Met Val Arg Asn Ala Arg Arg Ser Met Leu Glu Glu Leu Glu Gly Met
20 25 30

Leu Glu Ile Val Glu Pro Gln Pro Pro Gly Lys Pro Arg Thr Leu Ser
35 40 45

Arg Arg Arg Phe Asp Leu Pro Glu Gly Val Ala Ile Glu Lys Glu
50 55 60

<210> 45
<211> 473
<212> PRT
<213> Zea mays

<400> 45

Met Ala Lys Thr Pro Ser Phe Ala Val Ala Ala Val Ala Gly Gly Arg
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Gly Pro Val His Asn Arg Thr Gln Leu Leu Leu Leu Leu Val Ala
20 25 30

Val Ala Ala Ser Ala Ser Thr Ala Gly Phe Leu Leu Arg Gly Ala Leu
35 40 45

Arg Asp Pro Cys Asp Gly Arg Gly Asp Pro Ala Ala Leu Asn Thr Ala
50 55 60

Arg Gly Glu Cys Phe Gly Arg Ile Thr Ile Glu Ala Met Ala Phe Lys
 370 375 380

Leu Pro Val Leu Gly Thr Ala Ala Gly Gly Thr Thr Glu Ile Val Leu
 385 390 395 400

Asp Gly Ser Thr Gly Leu Leu His Pro Ala Gly Lys Glu Gly Val Ala
 405 410 415

Pro Leu Ala Lys Asn Ile Val Arg Leu Ala Ser His Ala Glu Gln Arg
 420 425 430

Val Ser Met Gly Glu Lys Gly Tyr Gly Arg Val Lys Glu Met Phe Met
 435 440 445

Glu His His Met Ala Glu Arg Ile Ala Ala Val Leu Lys Asp Val Leu
 450 455 460

Arg Lys Ser Gln Glu His Ser Arg Ser
 465 470

<210> 46
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 <212> PRT
 <213> Zea mays

<400> 46

Pro Arg Val Arg Leu Ile Ile Glu Lys Asn Arg Asp Tyr Thr Val Asp
 1 5 10 15

Tyr Ser Ser Ser Ser Phe Gly Leu Ser Gly Ala Ser Tyr Ile Ser Ser
 20 25 30

Pro Met Arg Glu Thr Glu Gln Ser Lys Thr Ser Phe Asp Gln Phe Tyr
 35 40 45

Ser Asn Ala Asn Phe Gln Leu Tyr Leu Ser Phe Cys Asn Phe Asp Lys
 50 55 60

Ala Met Phe Leu Gly Phe Phe His Glu Leu Ser Glu Leu Pro Phe Glu
 65 70 75 80

Leu Gln Arg Lys Ala Val Arg Asp Leu Lys Thr Ser Leu Ser Gly Glu
 85 90 95

Asn Glu Ile Trp His Ser Met Val Tyr Asn Gly Phe Phe Glu Ala Phe
 100 105 110

His Glu Phe Leu Lys Asn Asp Ser Gly Ile His Thr Leu Gln Ala Arg
 115 120 125

Arg Ala Gly Ile Gln Phe Phe Leu Ala Phe Leu Ser Ser Gly Arg Ala
 130 135 140

Arg Ile Pro Ser Val Cys Glu Asp Val Val Leu Leu Ile Ala Ser Leu

145		150		155		160
His Asp Ser Glu Phe Lys Gln Glu Ala Leu Leu Ile Val His Glu Leu						
	165			170		175
Leu Gln Glu Pro Ser Cys Pro Lys Ser Ser Leu Met Ala Ser Ile Leu						
	180			185		190
Ser Pro Ser Val Phe Gly Ala Leu Asp Ser Gly Glu Thr Lys Cys Leu						
	195			200		205
Asp Leu Ala Leu Gln Ile Ile Cys Lys Ile Ser Ser Asp Asn Asp Ile						
	210			215		220
Lys Ser Tyr Leu Leu Ser Ser Gly Ile Val Ser Arg Leu Ser Pro Leu						
	225			230		235
Leu Gly Glu Gly Lys Met Thr Glu Cys Ser Leu Lys Ile Leu Arg Asn						
	245			250		255
Leu Ser Asp Val Lys Glu Thr Ala Gly Phe Ile Ile Arg Thr Gly Asn						
	260			265		270
Cys Val Ser Ser Ile Ser Asp His Leu Asp Thr Gly Ser His Ser Glu						
	275			280		285
Arg Glu His Ala Val Val Ile Leu Leu Gly Val Cys Ser His Ser Pro						
	290			295		300
Glu Val Cys Ser Leu Ser Met Lys Glu Gly Val Ile Pro Ala Leu Val						
	305			310		315
Asp Leu Ser Val Ser Gly Thr Lys Val Ala Arg Asp Cys Ser Val Lys						
	325			330		335
Leu Leu Gln Leu Leu Arg Asn Phe Arg Arg Cys Asp Gln Phe Ser Ser						
	340			345		350
Ser Cys Ser Arg Glu Leu Ala Val Asp His Val Ser Glu Asn Thr Arg						
	355			360		365
Asn Gly Ser Ile Cys Met Gln Pro Ile Ser Lys Ser Ala Arg Tyr Ile						
	370			375		380
Ser Arg Lys Leu Asn Leu Phe Ser Lys Pro Arg Ser Leu Thr Leu Ala						
	385			390		395
						400

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 <213> Zea mays
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Pro Pro Thr Val Glu Pro Ser Pro Ser Ser Pro Ala Pro Pro Pro Ser	20	25	30
Ser Leu Glu Ala Ile Ala Ala Glu Ala Met Ser Phe Asp Glu Asp Asp	35	40	45
Thr Glu Glu Ser Ile Asp Val Lys Val Gln Lys Ala Leu Asp Cys Pro	50	55	60
Cys Val Ala Asp Leu Lys Asn Gly Pro Cys Gly Gly Gln Phe Val Asp	65	70	75
Ala Phe Ser Cys Phe Leu Arg Ser Arg Glu Glu Glu Lys Gly Ser Asp	85	90	95
Cys Val Lys Pro Phe Ile Thr Leu Gln Asp Cys Ile Lys Ala Asn Pro	100	105	110
Glu Ala Phe Ser Lys Glu Ile Leu Glu Glu Glu Glu Asn Asp Glu Glu	115	120	125
Ala Asp Lys Ser Asn Leu Lys Val Arg Ala Pro Ser Trp Ser Arg Glu	130	135	140
Ser Lys Pro Lys Val	145		
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<212>	PRT		
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Gly Gln Thr Arg Trp Glu Met Phe Asp Leu Leu Ser Ser Leu Pro Ser	1	5	10
Thr Ser Ser Ala Ser Ser Thr Thr Thr Val Ser Ser Thr Ala Ser Ser	20	25	30
Gly Ala Pro Pro Pro Ser Arg Pro Asp Trp Met Leu Phe	35	40	45
<210>	49		
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<212>	PRT		
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His Ala Ser Ala Ile Gly Arg Leu Ile Ser Pro Ser Ser Gly Cys Ser	1	5	10
			15

Year	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

<400>	50
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Leu Pro Asp Arg Ile Gln Ala Ile Pro Asp Gly Thr Pro Ala Ala Ser
115 120 125

Lys Gln Thr Gly Ser Trp Ala Ala Ser Ala Ser Arg Pro Gly Ile Lys
130 135 140

Phe Asp Thr Asp Gly Lys Phe Asp Asp Glu Tyr Phe Gln Gln Thr Glu
145 150 155 160

Glu Ser Ser Gly Phe Arg Lys Glu Tyr Glu Met Arg Lys Met Lys Gln
165 170 175

Asp Gln Gly Leu Asp Met Ile Ala Glu Gly Leu Asp Thr Leu Lys Asn
180 185 190

Met Ala His Asp Met Asn Glu Glu Leu Asp Arg Gln Val Pro Leu Met
195 200 205

Asp Glu Ile Asp Thr Lys Val Asp Arg Ala Ser Ser Asp Leu Lys Asn
210 215 220

Thr Asn Val Arg Leu Arg Asp Thr Val Asn Gln Leu Arg Ser Ser Arg
225 230 235 240

Asn Phe Cys Ile Asp Ile Val Leu Leu Ile Ile Ile Leu Gly Ile Ala
245 250 255

Ala Tyr Leu Tyr Asn Val Leu Lys Lys
260 265

<210> 52
<211> 107
<212> PRT
<213> Zea mays
<400> 52

His Ala Ser Gly Phe Leu Lys Cys Ala Ile Leu Thr Lys Pro Gln Ser
1 5 10 15

Tyr Gly Val Leu Leu Gln Leu Pro Ala Pro Gln Leu Glu Asn Ala Leu
20 25 30

Ser Lys Asn Pro Thr Leu Lys Thr Pro Leu Ala Glu His Ala Glu Gln
35 40 45

Pro Asn Ile Arg Ser Thr Leu Pro Arg Ser Thr Leu Val Val Leu Gly
50 55 60

Leu Ala Glu Asp Gln Pro Gln Gln Pro Ala Val Thr Gln Val Gln Ser
65 70 75 80

Ser Gln Asn Gln Ala Ala Glu Thr Ser Ser Ser Ala Ala Asp Thr Ala
85 90 95

Thr Glu Val Thr Gln Glu Ser Ser Gly Ala Ser
 100 105

<210> 53
 <211> 478
 <212> PRT
 <213> Glycine max

<400> 53

Ile Arg Leu Glu Phe Glu Ser Leu Glu Ile Glu Met Ala Asn Glu Asn
 1 5 10 15
 Glu Pro Ala Lys Leu Leu Leu Pro Tyr Leu Gln Arg Ala Asp Glu Leu
 20 25 30
 Gln Lys His Glu Pro Leu Val Ala Tyr Tyr Cys Arg Leu Tyr Ala Met
 35 40 45
 Glu Arg Gly Leu Lys Ile Pro Gln Ser Glu Arg Thr Lys Thr Thr Asn
 50 55 60
 Ala Leu Leu Val Ser Leu Met Lys Gln Leu Glu Lys Asp Lys Lys Ser
 65 70 75 80
 Ile Gln Leu Gly Pro Glu Asp Asn Leu Tyr Leu Glu Gly Phe Ala Leu
 85 90 95
 Asn Val Phe Gly Lys Ala Asp Lys Gln Asp Arg Ala Gly Arg Ala Asp
 100 105 110
 Leu Thr Thr Ala Lys Thr Phe Tyr Ala Ala Ser Ile Phe Phe Glu Ile
 115 120 125
 Leu Asn Gln Phe Gly Ala Val Gln Pro Asp Leu Glu Gln Lys Gln Lys
 130 135 140
 Tyr Ala Val Trp Lys Ala Ala Glu Ile Arg Lys Ala Leu Lys Glu Gly
 145 150 155 160
 Arg Lys Pro Thr Ala Gly Pro Pro Asp Gly Asp Glu Asp Leu Ser Val
 165 170 175
 Pro Leu Ser Ser Ser Ser Asp Arg Tyr Asp Leu Gly Thr Thr Glu Asn
 180 185 190
 Thr Val Ser Ser Pro Gly Pro Glu Ser Asp Ser Ser Arg Ser Tyr His
 195 200 205
 Asn Pro Ala Asn Tyr Gln Asn Leu Pro Ser Ile His Pro Ala Ala Pro
 210 215 220
 Lys Phe His Asp Thr Val Asn Asp Gln His Ser Ala Asn Ile Pro Ser
 225 230 235 240
 Ser Met Pro Phe His Asp Arg Val Asp Asn Asn Lys His Ser Ser Val

Cys Asp Lys Arg Cys Gln Ser Glu Arg Ile Leu Gly Asn Met Tyr Arg
 35 40 45
 Cys Lys Leu Thr Glu Thr Thr His Ile Cys Asp Lys Asn Cys Asn Gln
 50 55 60
 Arg Ile Leu Tyr Asp Asn His Asn Ser Leu Cys Arg Val Ser Gly Gln
 65 70 75 80
 Leu Phe Pro Leu Ser Pro Leu Glu Gln Gln Ala Val Arg Gly Ile Arg
 85 90 95
 Arg Lys His Glu Val Asp Ser Ser Glu Gly Cys Cys Phe Lys Arg Arg
 100 105 110
 Arg Gly Ala Gln Leu His Pro Ser Pro Phe Glu Arg Ser Tyr Ser Ala
 115 120 125
 Val Tyr Pro Ile Pro Ser Gln Val Gly Asp Gly Met Asp Met Ser
 130 135 140

<210> 55
 <211> 393
 <212> PRT
 <213> Zea mays

<400> 55

Met Lys Val Leu Val Leu Ala Val Leu Ala Leu Val Ala Ala Ala Ser
 1 5 10 15
 Ala Ala Gly Gln Gly Glu Glu Gly Gly Gly Pro Pro Leu Pro Phe Ala
 20 25 30
 Leu Gly Ala Ala Pro Ala Gly Cys Asp Val Ala Gln Gly Glu Trp Val
 35 40 45
 Arg Asp Asp Asp Ala Arg Pro Trp Tyr Gln Glu Trp Glu Cys Pro Tyr
 50 55 60
 Ile Gln Pro Gln Leu Thr Cys Gln Ala His Gly Arg Pro Asp Lys Ala
 65 70 75 80
 Tyr Gln Ser Trp Arg Trp Gln Pro Arg Gly Cys Ser Leu Pro Ser Phe
 85 90 95
 Asn Ala Thr Leu Met Leu Glu Met Leu Arg Gly Lys Arg Met Leu Phe
 100 105 110
 Val Gly Asp Ser Leu Asn Arg Gly Gln Tyr Val Ser Leu Leu Cys Leu
 115 120 125
 Leu His Arg Ala Ile Pro Asp Gly Ala Lys Ser Phe Glu Thr Val Asp
 130 135 140

Ser Leu Ser Val Phe Arg Ala Lys Asn Tyr Asp Ala Thr Ile Glu Phe
145 150 155 160

Tyr Trp Ala Pro Met Leu Ala Glu Ser Asn Ser Asp Asp Ala Val Val
165 170 175

His Ser Ala Asp Asp Arg Leu Ile Arg Gly Ala Pro Met Asp Arg His
180 185 190

Tyr Ser Phe Trp Lys Gly Ala Asp Val Leu Val Phe Asn Ser Tyr Leu
195 200 205

Trp Trp Val Ala Gly Asp Lys Ile Gln Ile Leu Arg Gly Ala Asp Asn
210 215 220

Asp Pro Ser Lys Asp Ile Val Glu Met Lys Ser Glu Glu Ala Tyr Arg
225 230 235 240

Leu Val Leu His Gln Val Val Arg Trp Leu Glu Arg Asn Val Asp Pro
245 250 255

Gly Lys Ser Arg Val Phe Phe Val Thr Ala Ser Pro Thr His Thr Asp
260 265 270

Gly Arg Ala Trp Gly Asp Asp Asp Ala Glu Gly Ser Ser Asn Cys Tyr
275 280 285

Asn Gln Thr Ser Pro Ile Ser Ala Ala Ser Ser Tyr Arg Gly Gly Thr
290 295 300

Ser Arg Glu Met Leu Arg Ala Thr Glu Glu Val Leu Ala Thr Ser Arg
305 310 315 320

Val Pro Val Gly Leu Val Asn Ile Thr Arg Leu Ser Glu Tyr Arg Arg
325 330 335

Asp Ala His Thr Gln Thr Tyr Lys Lys Gln Trp Val Glu Pro Thr Ala
340 345 350

Glu Gln Arg Ala Asp Pro Arg Ser Tyr Ala Asp Cys Thr His Trp Cys
355 360 365

Leu Pro Gly Val Pro Asp Thr Trp Asn Glu Leu Leu Tyr Trp Lys Leu
370 375 380

Phe Phe Pro Ser Asn Asp Gln Val Leu
385 390

<210> 56
<211> 109
<212> PRT
<213> Zea mays
<400> 56

Thr Arg Pro Cys Asn Ser Met Asn Met Gln Leu Ser Gln Leu Pro Leu

1 5 10 15
 Asp Cys Lys Arg Leu Thr Tyr Asp Ala Leu Glu Gly Ala Asn Val Thr
 20 25 30
 Pro Thr Ser Phe Tyr Asn Ile Gly Asp Leu Glu Ile Gln Asp Asn Leu
 35 40 45
 Ala Arg Val Trp Val Asp Ile Gly Ile His Glu Pro Leu Leu Leu Asp
 50 55 60
 Ile Leu Leu Asn Ala Leu Thr Thr Ile Ser Ser Asp His Val Gly Ile
 65 70 75 80
 Lys Gln Val Gln Phe Gly Gly Ser Glu Phe Leu Asn Trp Ser Glu Asp
 85 90 95
 Leu Lys Thr Glu Glu Val Gly Tyr Ser Val Cys Lys Ile
 100 105

<210> 57
 <211> 200
 <212> PRT
 <213> Glycine max

<400> 57

Phe Gly Ser Ser Met Ala Ser Ala Thr Arg Leu Val His Cys Glu Leu
 1 5 10 15
 Arg Ser Ala Arg Pro Ala Val Arg Ala Arg Glu Pro Ala Gly Pro Val
 20 25 30
 Gln Val Thr Ile Pro Lys Pro Lys Ala Ala Glu Ala Glu Gly Ala Asn
 35 40 45
 Ile Val Leu Gln Pro Arg Leu Cys Thr Leu Arg Ser Tyr Gly Ser Asp
 50 55 60
 Arg Ala Gly Val Leu Ile Lys Ala Arg Lys Glu Gly Asp Asp Asp Asp
 65 70 75 80
 Val Ser Pro Phe Phe Ala Ala Leu Ser Asp Tyr Ile Glu Ser Ser Lys
 85 90 95
 Lys Ser His Asp Phe Glu Ile Ile Ser Gly Arg Leu Ala Met Met Val
 100 105 110
 Phe Ala Ala Thr Val Thr Met Glu Met Val Thr Gly Asn Ser Met Phe
 115 120 125
 Arg Lys Met Asp Ile Glu Gly Ile Thr Glu Ala Gly Gly Val Cys Leu
 130 135 140
 Gly Ala Val Thr Cys Ala Ala Leu Phe Ala Trp Phe Ser Ser Ala Arg
 145 150 155 160

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Asn Arg Val Gly Arg Ile Phe Thr Val Ser Cys Asn Ala Phe Ile Asp
      165      170      175

Ser Val Ile Asp Gln Ile Val Asp Gly Leu Phe Tyr Glu Gly Asp Asp
      180      185      190

Pro Thr Asp Trp Pro Asp Glu Pro
      195      200

<210>      58
<211>      285
<212>      PRT
<213>      Zea mays

<400>      58

Pro Arg Val Arg Cys Pro Thr Thr Leu Lys Arg Ile Cys Arg Gln His
1      5      10      15

Gly Ile Asn Arg Trp Pro Ser Arg Lys Ile Lys Lys Val Gly His Ser
      20      25      30

Leu Lys Lys Leu Gln Met Val Ile Asp Ser Val His Gly Ser Glu Gly
      35      40      45

Thr Val Gln Leu Ser Ser Leu Tyr Glu Asn Phe Thr Lys Thr Thr Trp
      50      55      60

Ser Glu Arg Glu Leu Gln Gly Asp Ala Thr Tyr Pro Leu Ser Glu Glu
65      70      75      80

Lys Gly Pro Leu Glu Pro Ser Val Pro Asp Arg Tyr Cys Glu Gly Arg
      85      90      95

Phe Thr Ser His Thr Ser Gly Ser Asn Ser Leu Ser Pro Ser Cys Ser
      100      105      110

Gln Ser Ser Asn Ser Ser His Gly Cys Ser Ser Gly Ser Lys Ser Gln
      115      120      125

Gln His Val Ser Ala Pro Gln Leu Ala Val Lys Lys Glu Val Phe Met
      130      135      140

Glu Glu Asn Gln Ser Ser Thr Leu Leu Lys Ala Ala Ser His Ala Glu
145      150      155      160

Leu Gln Met Leu Pro Glu Glu Arg Leu Val Thr Leu Pro Arg Ser His
      165      170      175

Ser Gln Val Leu Leu Ser Glu Gln Lys Pro Val Glu Asn Ile Thr Gly
      180      185      190

Met Gln Met Ser Lys Pro Asp Ser Leu Lys Ile Lys Ala Met Tyr Gly
      195      200      205

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Glu Glu Arg Cys Ile Phe Arg Leu Gln Pro Ser Trp Gly Phe Glu Lys
 210 215 220
 Leu Lys Glu Glu Ile Leu Lys Arg Phe Gly Ile Ala Arg Glu Val Tyr
 225 230 235 240
 Val Asp Leu Lys Tyr Leu Asp Asp Glu Ser Glu Trp Val Leu Leu Thr
 245 250 255
 Cys Asn Ala Asp Leu Leu Glu Cys Ile Asp Val Tyr Lys Ser Ser Ser
 260 265 270
 Thr Gln Thr Val Arg Ile Leu Val His Ser Ser Asp Gln
 275 280 285

<210> 59
 <211> 115
 <212> PRT
 <213> Zea mays

<400> 59
 Met Arg Ala Met Ser Ser Ala Val Asn Gly Met Leu Arg Ala Arg Leu
 1 5 10 15
 Arg Gly Ala Ala Arg Val Arg Gly Gly Gly Gly Glu Gly Ala Gly Arg
 20 25 30
 Trp Thr Thr Pro Gly His Glu Glu Arg Pro Lys Gly Tyr Leu Phe Asn
 35 40 45
 Arg Pro Pro Pro Pro Pro Gly Glu Ser Arg Lys Trp Glu Asp Trp Glu
 50 55 60
 Leu Pro Cys Tyr Val Thr Ser Phe Leu Thr Val Val Ile Leu Gly Val
 65 70 75 80
 Gly Leu Asn Ala Lys Pro Asp Leu Thr Ile Glu Thr Trp Ala His Gln
 85 90 95
 Lys Ala Leu Glu Arg Leu Gln Gln Gln Glu Leu Ala Ala Ala Asp Thr
 100 105 110
 Gln Ala Glu
 115

<210> 60
 <211> 168
 <212> PRT
 <213> Glycine max

<400> 60
 Ile Arg Leu Glu Gln Arg Pro Val Glu Gly Asn Ala Thr Met Lys Gln
 1 5 10 15

Asn Asp Leu Val Lys Leu Val Ser Ser Thr Leu Cys Gln Glu Lys Asp
 705 710 715 720

Ser Ala Ser

<210> 62
 <211> 342
 <212> PRT
 <213> Glycine max

<400> 62

Met Ser Glu Lys Ala Leu Arg Asp Leu Asn Thr Ile Leu Gly Thr Glu
 1 5 10 15

Arg Lys Asn Glu Asp Ser Ser Lys Ala Cys Leu Ser Lys Pro Ser Val
 20 25 30

Asp Asn Ala Val Glu Asn Ile Glu Glu Trp Gln Lys Lys Asn Asn Ser
 35 40 45

Pro Ser Leu Val Ser Pro Ala Val Asn Gly Asn Leu Ala Val Thr Ala
 50 55 60

Asn Ser Gly Ala Glu Val Val Asn Pro Glu Val Glu Tyr Ile Glu Ser
 65 70 75 80

Glu Asn Leu Asn Asp Val Asp Asp Ile Asp Thr Cys Leu Lys Thr Leu
 85 90 95

Leu Ala Gly Leu Asp Ser Lys Asp Trp Val Leu Val Cys Asp Thr Leu
 100 105 110

Asn Asn Val Arg Arg Leu Ser Ile Phe His Lys Glu Ala Met Leu Asp
 115 120 125

Met Leu Gly Asp Val Ile Thr Ser Ile Ala Lys Ser Leu Lys Ser Pro
 130 135 140

Arg Ser Ala Val Cys Lys Thr Ala Ile Met Thr Ser Ala Asp Ile Phe
 145 150 155 160

Ser Ala Tyr Asn Asp Leu Ile Ile Asp Ser Leu Asp Pro Leu Leu Val
 165 170 175

Gln Leu Leu Leu Lys Ser Ser Gln Asp Lys Arg Phe Val Cys Glu Ala
 180 185 190

Ala Glu Lys Ala Leu Ile Ser Met Thr Ile Trp Ile Ser Pro Ile Ser
 195 200 205

Leu Leu Pro Lys Leu Gln Pro Tyr Leu Lys Asn Lys Asn Pro Arg Ile
 210 215 220

Arg Ala Lys Ala Ser Met Cys Phe Ser Arg Ser Val Pro Gln Leu Gly
 225 230 235 240

Ala Glu Gly Ile Lys Thr Tyr Gly Ile Asp Lys Leu Ile Gln Val Ala
245 250 255

Ala Ser Gln Leu Ser Asp Gln Leu Pro Glu Ser Arg Glu Ala Ala Arg
260 265 270

Thr Leu Leu Leu Glu Leu Gln Asn Val Tyr Glu Lys Ser His Asp Leu
275 280 285

Ile Lys Pro Ala Thr Pro Thr Val Asn Asn Glu His Thr Val Asn Glu
290 295 300

Glu Asn Pro Glu Val Ser Ser Trp Glu Ser Phe Cys Gln Ser Lys Leu
305 310 315 320

Ser Pro Leu Ser Ala Gln Ala Val Leu Arg Val Thr Thr Ser Ile Ala
325 330 335

Arg Glu Gly Leu Val Ser
340

<210> 63
<211> 509
<212> PRT
<213> Zea mays
<400> 63

Pro Arg Val Arg Ala Leu Leu Ala Ser Thr Ile Val Pro His Pro Asn
1 5 10 15

Gln Gly Asn Met His Glu Pro Ala Ile Asp Met Pro Phe Gly Ser Val
20 25 30

Leu Leu Gln Ala Leu Val Ser Ser Asp Val Asn Gly Asp Met Glu Ala
35 40 45

Cys Cys Arg Ala Ser Ser Val Leu Ser His Ile Val Lys Asp Asn Met
50 55 60

Gln Ser Lys Asp Arg Val Leu Gln Ile Gln Leu Glu Thr Leu Thr Pro
65 70 75 80

Ser Leu Gly Arg Thr Glu Pro Val Leu His Arg Ile Val Thr Cys Leu
85 90 95

Ser Ile Ala Ala Ser Thr Glu Gly Glu Asn Asn Gln Asn Asn Gln Pro
100 105 110

Glu Glu Pro Tyr Ile Gln Pro Val Ile Leu Arg Leu Leu Ile Ile Trp
115 120 125

Leu Val Asp Cys Ser Asn Ala Val Asn Cys Leu Leu Glu Ser Ala Val
130 135 140

Lys Asp Ser Glu Ala Glu Leu Asn Gly Leu Leu Val Cys Leu Gly Gln
 450 455 460
 Glu Gln Thr Lys Val Glu Lys Leu Ser Thr Arg Leu Ala Glu Leu Gly
 465 470 475 480
 Glu Asp Val Asp Ala Leu Leu Gln Gly Ile Gly Asp Asp Thr Ala Ile
 485 490 495
 Pro Asp Asp Asp Asp Asp Asp Asp Glu Asp Ser Glu Glu
 500 505

<210> 64
 <211> 102
 <212> PRT
 <213> Zea mays

<400> 64

Gln Phe Lys Ile Asp Pro Gln Asp Phe Gln Asp Ser Glu Pro Asp Ile
 1 5 10 15
 Leu Ala Asn Ser Ala Ser Ser Ile Ile Glu Arg Ile Lys Glu Asn Ser
 20 25 30
 Asp Gln Cys Ala Ala Ala Leu Arg Ser Leu Cys Arg Arg Lys Lys Gly
 35 40 45
 Leu Thr Val Glu Glu Ala Ser Leu Ile Gly Val Asp Ser Leu Gly Ile
 50 55 60
 Asp Val Arg Ala Phe Ser Gly Leu Glu Val Lys Thr Val Arg Phe Ser
 65 70 75 80
 Phe Asn Ala Gln Ala Leu Ser Glu Arg Ser Ala Glu Lys Lys Ile Arg
 85 90 95
 Arg Met Leu Phe Pro Arg
 100

<210> 65
 <211> 587
 <212> PRT
 <213> Zea mays

<400> 65

Pro Arg Val Arg Ser Val Leu Lys Thr Lys Pro Ser Pro Arg Ile Leu
 1 5 10 15
 Thr Glu Ala Ala Pro Trp Arg Gln Gln Glu Arg Ser Ala Thr Asn Ile
 20 25 30
 Cys Arg Glu Ala Glu Gly Arg Pro Arg Ile Ala Ser Val Tyr Ala Asp
 35 40 45

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Ile His Cys Leu Ala Val Gln Met Leu Leu Leu Arg Cys Leu Leu Met
 20 25 30
 Asp Leu Asp Arg Gln Asn Thr Gly Lys Ala Thr Val Leu Gly Asp Ala
 35 40 45
 Ala Arg Val Leu Arg Asp Leu Ile Thr Gln Val Glu Ser Leu Arg Gln
 50 55 60
 Glu Gln Ser Ala Leu Val Ser Glu Arg Gln Tyr Val Ser Ser Glu Lys
 65 70 75 80
 Asn Glu Leu Gln Glu Glu Asn Ser Ser Leu Lys Ser Gln Ile Ser Glu
 85 90 95
 Leu Gln Thr Glu Leu Cys Ala Arg Met Arg Ser Ser Ser Leu Ser Gln
 100 105 110
 Thr Ser Ile Gly Met Ser Asp Pro Ala Thr His Gln Gln Met Gln Met
 115 120 125
 Trp Ser Ser Ile Pro His Leu Ser Ser Val Ala Met Ala Ala Arg Pro
 130 135 140
 Ala Ser Ala Ala Ser Pro Leu His Gly Gln Glu Gly Tyr Ser Ala Asp
 145 150 155 160
 Ala Gly Gln Ala Gly Tyr Ala Pro Gln Pro Gln Pro Arg Glu Leu Gln
 165 170 175
 Leu Phe Pro Gly Ser Ser Ala Ser Ser Ser Pro Glu Arg Glu Arg Ser
 180 185 190
 Ser Arg Leu Gly Ser Gly Gln Ala Thr Arg Pro Ser Leu Thr Asp Ser
 195 200 205
 Leu Pro Gly Gln Leu Cys Leu Ser Leu Leu Gln Pro Ser Gln Glu Ala
 210 215 220
 Ser Gly Gly Gly Gly Gly Gly Val Met Ser Arg Ser Arg Glu Glu Arg
 225 230 235 240
 Arg Asp Gly

<210> 67
 <211> 423
 <212> PRT
 <213> Zea mays

<400> 67

Thr Arg Pro Ala Ile Arg Glu Leu Trp Arg Pro Asn Pro Ser Gln Leu
 1 5 10 15
 Ile Leu Leu Gln Thr Arg Gly Ile Gly Ala Leu His Lys Glu Leu Pro
 20 25 30

Lys	Ala	Cys	Ala	Leu	Thr	Gly	Ser	Ser	Asp	Pro	Cys	Tyr	Ile	Glu	Ala	35	40	45	
Tyr	His	Leu	Ala	Asp	Pro	Thr	Asp	Gly	Arg	Ile	Thr	Leu	His	Leu	Lys	50	55	60	
Ile	Leu	Asn	Leu	Thr	Glu	Leu	Glu	Leu	Asn	Arg	Val	Asp	Ile	Arg	Val	65	70	75	80
Gly	Leu	Ser	Gly	Ala	Leu	Tyr	Tyr	Met	Asp	Gly	Phe	Ser	Arg	Thr	Val	85	90	95	
Arg	His	Leu	Arg	Asn	Leu	Val	Ser	Gln	Asp	Pro	Val	Gln	Ser	Ser	Val	100	105	110	
Thr	Val	Gly	Val	Ser	His	Phe	Glu	Arg	Cys	Ser	Leu	Trp	Val	Gln	Val	115	120	125	
Leu	Tyr	Tyr	Pro	Phe	Tyr	Gly	Ser	Ser	Gly	Ser	Thr	Asp	Tyr	Glu	Gly	130	135	140	
Asp	Tyr	Ala	Glu	Glu	Asp	Ser	Gln	Met	Met	Arg	Gln	Lys	Arg	Ser	His	145	150	155	160
Arg	Pro	Glu	Leu	Gly	Glu	Pro	Val	Val	Leu	Arg	Cys	Gln	Pro	Tyr	Lys	165	170	175	
Phe	Pro	Leu	Ala	Glu	Leu	Leu	Leu	Pro	Leu	Glu	Cys	Ser	Pro	Val	Glu	180	185	190	
Tyr	Phe	Arg	Leu	Trp	Pro	Ser	Leu	Pro	Ala	Met	Val	Glu	Cys	Thr	Gly	195	200	205	
Thr	Tyr	Thr	Tyr	Glu	Gly	Ser	Gly	Phe	Lys	Ala	Thr	Ala	Ala	Gln	Gln	210	215	220	
Tyr	Asp	Ser	Ser	Pro	Phe	Leu	Ser	Gly	Leu	Lys	Ser	Ile	Ser	Ser	Lys	225	230	235	240
Pro	Phe	His	Gln	Val	Cys	Ser	His	Phe	Ile	Arg	Thr	Val	Ala	Gly	Phe	245	250	255	
Gln	Leu	Cys	Tyr	Ala	Ala	Lys	Thr	Trp	Phe	Gly	Gly	Phe	Val	Gly	Met	260	265	270	
Met	Ile	Phe	Gly	Ala	Ser	Glu	Val	Ser	Arg	Asn	Val	Asp	Leu	Gly	Asp	275	280	285	
Glu	Thr	Thr	Thr	Met	Ile	Cys	Lys	Phe	Val	Met	Arg	Ala	Ser	Asp	Glu	290	295	300	
Ser	Ile	Thr	Arg	Glu	Ile	Lys	Ser	Asp	Leu	Gln	Gly	Trp	Leu	Asp	Asp	305	310	315	320
Ile	Thr	Asp	Gly	Ala	Val	Glu	Tyr	Met	Pro	Glu	Asp	Glu	Val	Lys	Ser	325	330	335	

Val Ala Ala Glu Gln Leu Lys Ile Ser Met Glu Arg Ile Ala Leu Leu
340 345 350

Lys Ala Ala Arg Pro Lys Val Pro Pro Ala Lys Thr Asp Gln Glu Glu
355 360 365

Glu Glu Glu Arg Lys Gln Ser Glu Glu Leu Asp Gly Phe Gly Asn Pro
370 375 380

Lys Gly Pro Ser Thr Leu Ser Lys Leu Thr Ala Glu Glu Ala Glu His
385 390 395 400

Arg Ala Leu Gln Ala Ala Val Leu Gln Glu Trp His Gln Leu Cys Lys
405 410 415

Glu Arg Ala Met Lys Ala Gln
420

<210> 68
<211> 371
<212> PRT
<213> Zea mays

<400> 68

Pro Arg Val Arg Ala Ser Gly Ile Ser Gly Thr Ser Val Arg Leu Thr
1 5 10 15

Ala Gly Ala Gly Leu Pro Val His Met Lys Gly Glu Leu Asn Thr Ala
20 25 30

Phe Ile Gly Leu Gly Asp Asp Gly Gly Tyr Gly Gly Trp Val Pro
35 40 45

Leu Ala Ala Leu Lys Lys Val Leu Arg Gly Ile Leu Lys Tyr Leu Gly
50 55 60

Val Leu Trp Leu Phe Ala Gln Leu Pro Glu Leu Leu Lys Glu Ile Leu
65 70 75 80

Gly Ser Ile Leu Lys Asp Asn Glu Gly Ala Leu Leu Asn Leu Asp Gln
85 90 95

Glu Gln Pro Ala Leu Arg Phe Tyr Val Gly Gly Tyr Val Phe Ala Val
100 105 110

Ser Val His Arg Val Gln Leu Leu Leu Gln Val Leu Ser Val Lys Arg
115 120 125

Phe His His Gln Gln Gln Gln Gln Ala Gln Ser Asn Ala Gln Glu
130 135 140

Glu Leu Ala Ala Val Glu Ile Asn Glu Ile Cys Asp Tyr Phe Ser Arg
145 150 155 160

35	40	45
Asn Ile Arg Glu Met Gln Ala Gln Lys Val Arg Gly Thr Leu Leu Ile		
50	55	60
Pro Cys Arg Thr Ala Met Arg Gly Ser Phe Pro Leu Asn Gly Thr Tyr		
65	70	75
Phe Gln Val Asn Glu Val Phe Ala Asp His Cys Ser Ser Gln Asn Pro		
85	90	95
Ile Asp Val Pro Arg Ser Trp Ile Trp Asp Leu Pro Arg Arg Thr Val		
100	105	110
Tyr Phe Gly Thr Ser Val Pro Thr Ile Phe Arg Gly Leu Thr Thr Glu		
115	120	125
Glu Ile Gln Arg Cys Phe Trp Arg Gly Phe Val Cys Val Arg Gly Phe		
130	135	140
Asp Arg Thr Val Arg Ala Pro Arg Pro Leu Tyr Ala Arg Leu His Phe		
145	150	155
Pro Val Ser Lys Val Val Arg Gly Lys Lys Pro Gly Ala Ala Arg Ala		
165	170	175
Glu Glu		
<210>	70	
<211>	222	
<212>	PRT	
<213>	Zea mays	
<400>	70	
Thr Arg Pro Leu Arg Val Lys Lys Leu Gln Gln Glu Ala Ala Arg Cys		
1	5	10
Leu Ser Leu His Lys Thr Met Glu Leu Gln Pro Glu Leu Ser Leu Gly		
20	25	30
Pro Val Trp Pro Gly Phe Ala Ala Gly Asp Leu Ala Ala Lys Ser Ser		
35	40	45
Ser Ser Glu Ser Asp Gly Thr Ser Arg Lys Lys Arg Lys His Tyr Thr		
50	55	60
Ala Ser Trp Glu Glu Pro Gln Gln Pro Pro Ala Ser Leu Glu Leu Gln		
65	70	75
Leu Asn Asp Pro Leu Pro Leu Asp Trp Glu Gln Cys Leu Asp Leu Gln		
85	90	95
Ser Gly Arg Met Tyr Tyr Leu Asn Arg Lys Thr Leu Lys Lys Ser Trp		
100	105	110

Val Arg Pro Gln Val Gln Ser Val Asn Leu Asp Leu Asn Ile Ser Thr
115 120 125

Ala Ala Ala Ile Asp Asn Cys Ala Ala Asn Gly Ala Ala Ala Ala Ala
130 135 140

Ser Asp Asp Glu Asp Glu Pro Arg Lys Pro Ala Gly Thr Leu Phe Ser
145 150 155 160

Gly Gly Ser Met Val Ala Val Pro Cys Ala Asn Cys His Leu Leu Val
165 170 175

Met Leu Cys Lys Ser Ser Pro Ser Cys Pro Asn Cys Lys Phe Val Gln
180 185 190

Pro Leu Ala Pro Ala Val Pro Pro Ala Ala Val Ala His Trp Arg Ile
195 200 205

Asp Ala Ala Val Lys Pro Leu Glu Thr Leu Ser Leu Leu His
210 215 220

<210> 71
<211> 303
<212> PRT
<213> Zea mays

<400> 71

Met Lys Leu Lys Asn Ser Ala Val Glu Thr Phe Lys Glu Asn Asn Met
1 5 10 15

Ile Phe Thr Ser Glu Gly Asn Leu His Ser Lys Lys Met Arg Glu Asp
20 25 30

Tyr Val Ala Ser Pro Asn Gln Pro Gly Ala Val Gln Thr Arg Cys Lys
35 40 45

Trp Ile Ile Gly Asp Val Thr Glu Val Phe Asp Arg Ser Thr Trp Lys
50 55 60

Leu Gly Lys Ile Leu Lys Met Leu Lys Asn Asn Tyr Phe Val Ile Arg
65 70 75 80

Leu Ala Asp Cys Ile Gln Leu Lys Glu Phe His Ile Ser Ser Leu Arg
85 90 95

Ile Pro Arg Gly Leu Glu Ala Pro Gln Ser Lys Pro Phe His Ala Ala
100 105 110

Asp Lys Ala Thr Gly Arg Gly Asn Arg Arg Pro Ala Asp Gly Ala Leu
115 120 125

Pro Gly Ala Arg Ala Ala Asp Gln Met Gly His Arg Ala Tyr Glu Leu
130 135 140

Gly Ser Ser Gly Lys Lys Arg Lys Ala Thr Ala Asp Ala Ser His His

DO NOT WRITE IN THESE SPACES

<400> 73

1

Arg Gln Ala Ala Ile Phe Arg Ser Glu Asn Gly Asn Val Trp Gln Val
35 40 45

Lys Ile Phe Gly Glu Asp Lys Thr Gly Lys Arg Ser Gly Gln Tyr Leu
50 55 60

Ala Pro Thr Gly Ile Gly Asp Val Pro Tyr Leu Pro Thr Ile Pro Arg
65 70 75 80

Arg Ile Ile Leu Ala Ile Ala Glu Lys His Gly Val Lys Pro Pro Glu
85 90 95

Asp Gly Gln Asp Phe Trp Pro Trp Phe Val Asp His Pro Glu Ile Pro
100 105 110

Leu Ile Val Thr Glu Gly Gly Lys Lys Ala Leu Ala Ala Ile Ser Gln
115 120 125

Gly Tyr Val Ala Leu Ser Leu Tyr Gly Cys Leu Cys Gly Asn Asp Gly
130 135 140

Leu Thr Ile Lys Pro Ser Leu Leu Pro Tyr Val Gln Gly Arg Glu Val
145 150 155 160

Ala Ile Ala Tyr Asp Gln Asp Ala Lys Gly Ser Lys Gly Arg Lys Ala
165 170 175

Val Phe Lys Gly Thr Lys Arg Leu Ala Arg Asn Leu Thr Tyr His Ala
180 185 190

Lys Ala Thr Val
195

<210> 74

<211> 151

<212> PRT

<213> Zea mays

<400> 74

Pro Arg Val Arg Met Asn Leu Arg Arg Gln Thr Pro Leu Ala Ala Ile
1 5 10 15

His Ala Ala Leu Ala Ser Ala Asp Ala Met Val Ala Val His Gly Ala
20 25 30

Ala Val Thr His Phe Leu Phe Met Arg Pro Gly Ser Val Leu Leu Gln
35 40 45

Val Val Pro Val Gly Leu Asp Trp Ala Ala Asp Ala Phe Tyr Gly Lys
50 55 60

Pro Ala Gln Gln Leu Gly Leu Glu Tyr Leu Glu Tyr Lys Val Ala Pro
65 70 75 80

Glu Glu Ser Ser Leu Ala Ala Glu Tyr Gly Leu Asp Ser Thr Val Leu
 85 90 95
 Arg Asn Pro Trp Val Ile Ser Ser Arg Gly Trp Trp Glu Met Lys Lys
 100 105 110
 Val Tyr Met Asp Arg Gln Asn Val Thr Val Asn Ile Lys Arg Phe Gly
 115 120 125
 Glu Leu Leu Arg Thr Ala Arg Thr His Leu Lys Asn Thr Thr Ala Cys
 130 135 140
 Ala Ala Ala Ala Ala Leu Arg
 145 150

<210> 75
 <211> 356
 <212> PRT
 <213> Zea mays

<400> 75

Thr Arg Pro Ile Glu Pro Gly Ser Arg Pro Glu Thr Ser Asp Tyr Pro
 1 5 10 15
 Gln Ser Ser Glu Arg Pro Leu Thr Ala Thr Ser Ser Phe Ser Ser Ala
 20 25 30
 Ser Pro Phe Ser Glu Ser Ser Gln Leu Ala Ser Ser Ser Lys Gln Pro
 35 40 45
 Ala Pro Tyr Leu Pro Arg Asn His Met Gly Arg Arg Ser Phe Met Ser
 50 55 60
 Lys Pro Val Tyr Pro Leu Val Phe Arg Asn Pro Val Ser Glu Ser Glu
 65 70 75 80
 Ala Cys Arg Met Leu Glu Val Gly Asn Ala Gly Arg Ala Thr Pro Ser
 85 90 95
 Asp Asp Ser Gln Ala Ser Pro Leu Trp Arg Arg Ser Leu Ala Ser Pro
 100 105 110
 Asp Leu Lys Phe His Asn Ala Pro Asn Glu Leu Gly Lys Met Glu Thr
 115 120 125
 Ser Pro Glu Pro Asn Thr Ser Ser Arg Arg Glu Gly Phe Arg Trp Ser
 130 135 140
 Asn Ala Ser Ser Tyr Asp Phe Gly Tyr Asp Gly Asp Ala Ile Asp Ile
 145 150 155 160
 Ser Asp His Ile Ser Ile Glu Ser Gln Arg Ser Pro Thr Ser Ser Ala
 165 170 175
 Arg Phe Leu Lys Cys Gly Leu Cys Glu Arg Phe Leu His Gln Lys Ser

[illegible]

<210>	76
<211>	940
<212>	PRT
<213>	Zea mays

<400> 76

Met	Ala	Met	Ala	Met	Ala	Arg	Phe	Leu	Ser	Trp	Leu	Phe	Thr	Cys	Phe
1				5					10					15	
Ala	Ala	Leu	Ala	Val	Leu	Glu	Ala	Thr	Val	Pro	Ala	Arg	Ser	Trp	Arg
			20					25					30		
Ala	Pro	Ser	Pro	Thr	Pro	Arg	His	Glu	Ala	Arg	Arg	Phe	Glu	Gln	Lys
		35					40					45			
Thr	Asp	Arg	Phe	Trp	Glu	Tyr	Gln	Glu	Gln	Ser	Asn	Thr	Trp	Val	Gln
	50					55					60				
Val	Arg	Ala	Pro	Phe	Asp	Leu	Met	Ser	Cys	Ile	Asn	Gly	Thr	Cys	Thr
65				70						75					80

Lys	Val	Gly	Ser	Ile	Gly	Arg	Leu	Ala	Arg	Glu	Pro	Gly	Arg	His	Gly		
				85					90					95			
Leu	Pro	Pro	Val	Gln	Ser	Gln	Glu	Glu	Glu	Glu	Glu	Asp	Thr	Arg	Arg		
			100					105					110				
Val	Gln	Gly	Asp	Gly	Ala	Glu	Glu	Asp	Pro	Val	Leu	Pro	Val	Arg	Arg		
		115					120					125					
Arg	Ile	Ser	Leu	Thr	Arg	Met	Ser	Glu	Ser	Ser	Val	Trp	Val	Thr	Gly		
	130					135					140						
Gln	Ser	Gly	Ser	Ile	Tyr	Glu	Arg	Phe	Trp	Asn	Gly	Val	Val	Trp	Val		
145					150					155					160		
Ile	Ala	Pro	His	Glu	Leu	Pro	Ala	Ser	Ala	Gly	Tyr	Ala	Thr	Ala	Thr		
				165					170						175		
Phe	Ile	Val	Asn	Thr	Thr	Ile	Leu	Ala	Leu	Ser	Glu	Ala	Gly	Thr	Leu		
			180					185					190				
Tyr	Gln	Leu	Gln	Leu	Asn	Glu	His	Ala	Gln	Pro	Ile	Trp	Thr	Glu	Met		
		195					200					205					
Ala	Phe	Asn	Ser	Ser	Gln	Gln	Ser	Ala	Asn	Leu	Gly	Leu	Lys	Thr	Gln		
	210					215					220						
Ser	Gln	Ala	Met	Arg	Ile	Arg	Asn	Gly	Ile	Val	Ser	Asn	Asp	Gly	Arg		
225					230					235					240		
Lys	Leu	Phe	Leu	Ser	Ile	Met	Asn	Gly	Ser	Leu	Leu	Glu	Val	Thr	Glu		
				245					250					255			
Ile	Gln	Pro	Leu	Arg	Trp	Asn	Tyr	His	Gly	Arg	Pro	Pro	Gly	Ala	Asp		
			260					265					270				
Val	Ser	Tyr	Ile	Ser	Asp	Ala	Gly	Asn	Leu	Arg	Pro	Gly	Thr	Leu	Phe		
		275					280					285					
Thr	Val	Ser	Ser	Thr	Gly	Asp	Leu	Tyr	Glu	Phe	Asp	Lys	Glu	Thr	Lys		
						295					300						
Pro	Ser	Trp	Lys	Lys	His	Ile	Trp	Ser	Glu	Glu	Leu	Ala	Lys	Asn	Ile		
305					310					315					320		
Ser	Leu	Lys	Ser	Ser	Ala	Gly	Phe	Ala	Leu	His	Gly	Leu	Ser	Gly	Ser		
				325					330					335			
Asn	Ser	Val	Ser	Leu	Phe	Leu	Ile	Ser	Lys	Asp	Gly	Leu	Leu	Val	Glu		
				340				345					350				
Arg	Arg	Leu	His	Arg	Arg	Lys	Trp	Lys	Trp	Asp	Lys	His	Gly	Ala	Pro		
		355					360					365					
Thr	Gly	Gln	Arg	Leu	Ser	Ser	Ile	Ala	Glu	Val	Gln	Lys	Asp	Glu	Leu		
	370					375					380						

Thr Val Ala Leu Arg Lys Phe Lys Trp Lys Asp Cys His Ser Pro Pro
 690 695 700
 Asp Thr Lys Ile Ala Phe Ile Val Asp Gln Glu Val Phe Arg Arg Asn
 705 710 715 720
 Ile Ile Phe Val Val Gly Arg Asn Gly Arg Leu Tyr Gln Tyr Asn Arg
 725 730 735
 Ile Thr Glu Leu Trp His Arg His Tyr Gln Ser Pro His Leu Phe Leu
 740 745 750
 Ser Cys Ser Pro Gly Thr Ala Met Arg Pro Ser Pro Leu Ser Leu Ala
 755 760 765
 Gly Ser Leu Phe Met Val Ser Glu His Gly Gly Leu Val Glu Tyr His
 770 775 780
 Phe Ser Pro Gln Asp Gly Trp Glu Trp Val Glu His Gly Thr Pro His
 785 790 795 800
 Arg Gly Val Thr Leu Val Gly Ala Pro Gly Pro Cys Phe Asp Gly Ser
 805 810 815
 Gln Leu Phe Val Val Gly Ser Asp Gly His Val Tyr Arg Arg His Met
 820 825 830
 Glu Gly Arg Thr Trp Arg Trp Thr Ser His Gly His Pro Pro Ser Glu
 835 840 845
 Pro Ala Ala Val Asp Glu Gln Ser Cys Ala Thr Pro Asp Thr Gly Ala
 850 855 860
 Gly Ala His Tyr Ala Asp Gly Phe Arg Gly Ser Cys Asp Gly Lys Val
 865 870 875 880
 Ala Ala Val Arg Pro Val Pro Phe Ser Glu Asp Ala Val Val Phe Glu
 885 890 895
 Leu Arg Asp Gly Arg Leu Ala Glu Leu Arg Arg Pro Pro Ser Ala Asp
 900 905 910
 Gly Cys Gly Gly Trp Glu Trp Ala Arg Ile Ile Gly Thr Pro Ala Ser
 915 920 925
 Ala Cys Met Thr Ser Tyr Trp Thr Ala Val Ala Thr
 930 935 940

<210> 77
 <211> 556
 <212> PRT
 <213> Zea mays
 <400> 77

Thr Trp Lys Glu Phe Phe Val Ile Gly Ile Gln Trp Ala Ser Ile Tyr
 305 310 315 320
 His Pro Ala Leu Trp Cys Ala Phe Ser Leu Ile Phe Ser Leu Leu Leu
 325 330 335
 Val Pro Gln Val Leu Ala Val Val Phe Lys Asp Arg Phe Thr Tyr Lys
 340 345 350
 Ser Leu Cys Ala Tyr Gly Gly Gln Arg Thr Leu Leu Lys Ser Leu Val
 355 360 365
 Gly Gly Phe Ile Cys Cys Phe Val Glu Leu Ser Arg Leu Val Leu Val
 370 375 380
 Trp Leu Leu Leu Leu Leu Tyr Ala Ile Tyr Leu Val Phe Ile Pro Trp
 385 390 395 400
 Leu Phe Gly His Pro Ile Thr Glu Asp Gly Ser Leu Thr Tyr Met Thr
 405 410 415
 His Lys Gly Trp Ile Leu Lys Gly Pro Ser Ser Ser Asn Glu Val Val
 420 425 430
 His Ala Gly Ile Pro Asp Val Met Val Ile Val Leu Pro His Leu Cys
 435 440 445
 Phe Val Leu Val Pro Thr Ile Val Ile Leu Ala Ala Met Ala Ala Glu
 450 455 460
 Arg Thr Ala Tyr Arg Glu His Tyr Leu Ser Arg Ser Gly Lys Lys Lys
 465 470 475 480
 Asp Asp Tyr Arg Lys Ser Arg Thr Gln Ile Glu His Glu Asn Phe Trp
 485 490 495
 Asn Gly Arg Trp Ile Ser Lys Phe Leu Cys Leu Leu Cys Val Val Val
 500 505 510
 Leu Cys Lys His Trp Lys Leu Cys Arg Ala Leu Val Lys Ala Tyr Ala
 515 520 525
 Met Asn Pro Leu Leu His Ala Pro Val Leu Phe Phe Phe Val Pro Leu
 530 535 540
 Leu Met Val Phe Ala Ile Tyr Lys Thr Arg Ser Ile
 545 550 555

<210> 78
 <211> 167
 <212> PRT
 <213> Zea mays

<400> 78

Met Ala Gly Ala Glu Gly Glu Arg Trp Val Gly Leu Ala Thr Asp Phe

1	5	10	15
Ser Glu Gly	Ser Arg Ala Ala Leu Arg Trp Ala Ala Ala Asn Leu Leu		
	20	25	30
Arg Ala Gly	Asp His Leu Leu Leu Leu His Val Ile Lys Glu Pro Asp		
	35	40	45
Tyr Glu Gln	Ser Glu Ala Ile Leu Trp Glu Ser Thr Gly Ser Pro Leu		
	50	55	60
Ile Pro Leu	Ser Glu Phe Ser Asp Pro Ile Ile Ala Lys Lys Tyr Gly		
	65	70	75
Ala Lys Pro	Asp Ile Glu Thr Leu Asp Ile Leu Asn Thr Thr Ala Thr		
	85	90	95
Gln Lys Asp	Ile Val Val Val Val Lys Val Leu Trp Gly Asp Pro Arg		
	100	105	110
Glu Lys Leu	Cys Gln Val Ile His Asp Thr Pro Leu Ser Cys Leu Val		
	115	120	125
Ile Gly Ser	Arg Gly Leu Gly Lys Leu Lys Arg Val Leu Leu Gly Ser		
	130	135	140
Val Ser Asp	Tyr Val Val Asn Asn Ala Thr Cys Pro Val Thr Val Val		
	145	150	155
Lys Ser Thr	Ser Thr Glu Gly		
	165		

<210> 79
 <211> 81
 <212> PRT
 <213> Zea mays
 <400> 79

Gln Thr Arg	Ala Tyr Leu Ser Asn Val Cys Val Ala Lys Glu Leu Gln
1	5 10 15
Lys Lys Gly	Leu Gly Tyr Thr Leu Val Asp Lys Ser Lys Lys Leu Ala
	20 25 30
Leu Glu Trp	Gly Ile Thr Asp Leu Tyr Val His Val Ala Ile Asn Asn
	35 40 45
Val Ala Gly	Gln Lys Leu Tyr Lys Lys Cys Gly Phe Val Tyr Glu Gly
	50 55 60
Glu Glu Pro	Ala Trp Lys Gly Arg Phe Leu Gly Arg Pro Arg Arg Leu
	65 70 75 80
Leu	

[illegible]

Ser Met Gly Phe Asp Arg Ser Ala Ala Ile Gln Ala Leu Ala Leu Thr

SECRET

Gln Arg Asp Ala Ala Glu Lys Ala Ala Arg Thr Val Pro Gly Met Glu

Pro Leu His Val Asp Arg Ala Ser Gln Asp Phe Ser Ser Gln Gly Gln
 130 135 140
 Gln Gln Asn Arg Gly Pro Gly Ala Ala Gln Ala Pro Glu Glu Asp Lys
 145 150 155 160
 Ser Lys Lys Tyr Gln Ala Thr Leu Gln Leu Ala Gln Asn Leu Leu Leu
 165 170 175
 Gln Leu Gln Gln Arg Gly Ser Gly Asn Gln Ser
 180 185

<210> 85
 <211> 258
 <212> PRT
 <213> Zea mays
 <400> 85

His Ala Ser Asp Pro Thr Glu Phe Ile Leu Glu Thr Leu Glu Gln Ser
 1 5 10 15
 Asp Pro Gln Ser Leu Ile Gln Tyr Leu Ala Tyr Gln Asp Leu Cys Val
 20 25 30
 Val Ser Glu Cys Asn Leu Glu Pro Trp Arg Arg Ala Ala Phe Phe Glu
 35 40 45
 Glu Ser Gly Glu Thr Tyr Arg Arg Ile Val Thr Ala Cys Leu Lys Pro
 50 55 60
 Leu Glu Glu Phe Thr Ser Lys Ile Ala Glu Ala Leu Glu Gly Phe Ser
 65 70 75 80
 Ser Asp Gln Pro Glu Leu Met Leu Gln Gln Ser Arg Leu Phe Ser Ala
 85 90 95
 Phe Asp Asp Ser Gln Ile Cys Thr Trp Cys Ala Arg Thr Leu Ala Gly
 100 105 110
 Leu Thr Ala Arg Ser Arg Lys Glu Asp Arg Tyr Gly Val Ala Gln Leu
 115 120 125
 Thr Gly Cys Asn Ala Ala Val Met Thr Thr Leu Leu Ser Ala Leu Val
 130 135 140
 Ala Ile Glu Thr Cys Leu Gly Lys Lys Thr Asn Pro Gln Pro Val Arg
 145 150 155 160
 Ser Leu Gly Pro Glu Asn Ile Arg Trp Thr Asn Leu Ser Thr Gly Arg
 165 170 175
 Lys Gly Asn Gly Val Ala Ile Ala Ser Thr Gln Lys Ser Gly Leu His
 180 185 190
 Lys Lys Ala Tyr Ile Met Ala Asp Val Leu Arg Thr Ser Val Tyr His

195 200 205

Ile Leu Ser Ala Phe Ile Asp Asp Leu Gln Ala Asn Ala Lys Pro Ser
210 215 220

Ser Leu Glu Lys Asn Trp Ile Ser Glu Gly Arg Lys Pro Val Tyr Gly
225 230 235 240

Ser Gln Ala Val Leu Val Gln Lys Leu Ile Leu Phe Ile Glu Tyr Arg
245 250 255

Ala Val

<210> 86
<211> 288
<212> PRT
<213> Zea mays

<400> 86

Gly Leu Glu Glu Glu Asp Gly Glu Glu Ala Ala Pro Ala Ser Pro Trp
1 5 10 15

Ala Glu Ala Asp Ala Gln Ala Gly Gly Ala Glu Ala Gln Thr Glu Val
20 25 30

Leu Gly Ala Gly Glu Pro Asp Leu Glu Ser Lys Ile Val Ala Ile Arg
35 40 45

Asp Phe Leu Glu Asp Pro Asn Gln Pro Glu Asn Glu Leu Val Ser Leu
50 55 60

Leu Gln Asn Leu Ala Asp Met Asp Val Thr Tyr Asn Ala Leu Gln Glu
65 70 75 80

Thr Asp Ile Gly Arg Gln Val Asn Gly Leu Arg Lys His Pro Ser Ala
85 90 95

Glu Val Arg Arg Leu Val Lys Gln Leu Ile Arg Lys Trp Lys Glu Ile
100 105 110

Val Asp Asp Trp Val Arg Leu Asp Asn Ser Gly Gly Asp Gly Ser Ala
115 120 125

Ser Val Met Thr Asp Gly Asp Ser Pro His Lys Ile Gln Gly Arg Ser
130 135 140

His Gln Ser Pro Arg Val Ser Gly Phe Gln Tyr Ser Pro Ser Pro Gln
145 150 155 160

Arg Phe Asn Gly Ser Thr Ser Glu Met Ala Asn Asn Gly Phe Glu Ser
165 170 175

Thr Met Asp Ala Lys Arg Arg Ala Ser Pro Val Pro Ala His His Asn
180 185 190

Ser	Arg	Gln	Met	Asn	Asn	Asn	His	His	Ser	Thr	Thr	Ile	Thr	Thr	Ser
		195					200					205			
Thr	Ser	Ser	Ala	Pro	Ala	Phe	Ser	Val	Gln	Lys	Val	Thr	Arg	Glu	Gln
	210					215					220				
Lys	Gln	Ser	Leu	Val	Asp	Leu	Asp	Arg	Leu	Asp	Ser	Ala	Arg	Lys	Arg
225					230					235					240
Leu	Gln	Glu	Asn	Tyr	Gln	Glu	Ala	Gln	Asn	Ala	Lys	Lys	Gln	Arg	Thr
			245						250					255	
Ile	Gln	Val	Met	Asp	Ile	Asn	Asp	Ile	Pro	Lys	Pro	Lys	Ser	Arg	Asn
		260						265					270		
Ala	Phe	Ile	Arg	Lys	Ser	Gly	Ser	Gly	Gly	Leu	Pro	Ala	Arg	His	Arg
		275					280					285			

107E30: 107E30